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JPRS-TTP-90-017 *20 November 1990*

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INTER-AFRICAN AFFAIRS

PANA Head on Organization's Plans

AB1811204690 Abidjan VOIX D'AFRIQUE in French No 14, Nov 90 pp 34-35

[Interview with Auguste MPassi Muba, PANA chief executive, by VOIX D'AFRIQUE journalist Abdoulaye Sangare; date, place not given]

[Text] **[Sangare]**: The fifth information ministerial conference on 5 April elected you head of the PAN-AFRICAN NEWS AGENCY (PANA). What are the guidelines of your second term of office which has already started?

[Muba]: The program I presented at the fifth conference in Abuja (Nigeria) concerns modernizing the agency by acquiring computer tools and a satellite in order to consolidate the structures of the national agencies through good reception of PANA information throughout the continent and finally to commercialize this information. We think we made important progress two months ago by computerizing the agency, which facilitates our operation, transmissions, and even checking our news items. Therefore, the major commercialization handicap—transmission—is going to be solved thanks to the storage capacities of our systems in Paris and Dakar, the access to which is easy with minimum equipment (a simple transmission modem). I must explain that the commercialization aspect, which was not on the program at the beginning, was a change dictated by realities in the field.

[Sangare]: What are these realities?

[Muba]: They are financial problems. Since the creation of the agency, we never succeeded in recovering 100 percent of the contributions from member states. With the financial crisis in our countries, the current rate of recovery is bound to decrease, so it is imperative for PANA to find resources for itself inasmuch as our information is reliable. As of this year, I intend to attack this important aspect of my projects.

[Sangare]: Have there been market surveys already?

[Muba]: Only feasibility studies have been made. They have not yet been consolidated so we are going to do them again. Arrangements are under way at headquarters to set up a desk with specialists in market surveys, marketing, etc.

[Sangare]: In this regard, the earth satellite can be increasingly viewed as an unavoidable instrument for your enterprise. How are you going to tackle the satellite era?

[Muba]: So far we have used two methods for transmitting our information to African consumers: radio transmitter and telephone. Now the question is which is the most suitable method. The satellite has two essential advantages: quality and timeliness in transmitting both written information and photographs if the necessary structures are installed. In addition, it has the advantage of enabling group subscriptions by African countries to certain big agencies in order to reduce costs instead of paying country by country.

[Sangare]: Speaking about satellites, how far have you got with the project for creating an African satellite?

[Muba]: We are still at the stage of feasibility studies, but with the current economic crisis, our hopes have dwindled. We have the RASCOM (Regional African Satellite Communication) initiated by the Pan-African Union of Telecommunications, but people do not have the necessary common political willingness to realize it.

[Sangare]: The question of political will crops up incessantly when it comes to carrying out a job common to Africans. Thus, despite your reelection by an overwhelming majority, the contributions of member countries are still slow in coming, thereby jeopardizing your action plan. How do you explain this failure on the part of member states of the agency?

[Muba]: Alas! Again the issue is one of decreasing political will in the face of economic and financial crises. Henceforth, priorities are set for payments at the Central Bank or at the Treasury. It is hard for a country which has not paid workers' salaries to make payments to international organizations. In some cases, the problem of foreign exchange is sharply felt. Sometimes delays in contributions to PANA are due to sluggish procedures inherent in the bureaucratic character of government departments. There are countries which vote on the necessary funds each year, but as long as I do not visit them the operations remain stranded. At times, I solicit the support of heads of state before PANA is paid.

[Sangare]: The Abuja (Nigeria) ministerial conference authorized some amendments to the agency's treaty with a view to making more room to maneuver for journalists at the headquarters in Dakar and for correspondents. In light of these qualitative changes, how is PANA's central editorial board grappling with the multiparty system fever which is continuing to shake the continent?

[Muba]: The introduction of the multiparty system constitutes a real step forward regarding the problems of communication in Africa. It brings to an end the muzzled reporting which has for several years been the special style of the state-owned media. In any case, in the countries where it has been embarked upon (Gabon, Ivory Coast, etc), we notice that the national agencies have reacted with commendable reporting. This change should lead the national agencies to cover, with maximum objectivity, all national events whether they concern the ruling party or the opposition.

[Sangare]: What kind of information has your agency carried on the Lubumbashi events?

[Muba]: You are referring, in this case, to a national event covered by our Kinshasa office. Information provided by government sources was carried on PANA. First there were denials which were not very convincing. Then enquiries prompted by the Zairian state admitted that 23 died. We do not indulge in one-upmanship or sensationalism and cannot jump on an event and treat it as hot without establishing the accuracy of the information. You know, it was based on rumors that the big news agencies reported 150 dead.

[Sangare]: So you sacrifice an essential requirement of information which is timeliness. Is that not harmful to a telegraphic agency like PANA?

[Muba]: The timeliness requirement did not bind us to announce 150 dead because this was groundless. It rather required that we report that some events had taken place at Lubumbashi and that the extent of damage was not known. The uncertainty could only be removed gradually, in light of authorized enquiries.

[Sangare]: In the case of the conflict between Senegal and Mauritania, how do you "manipulate" the information?

[Muba]: We have instituted contributions from the two national agencies in order to have both versions, which we put at the disposal of African countries. If there is an imbalance, we invite the agency which has sent in inadequate reporting to increase its information flow. What we avoid at PANA are insults and personal attacks on leaders.

[Sangare]: The debut made on the New World Information and Communications Order [NWICO] was buried alive by UNESCO. Do you think that a real balance in the flow of information is still possible between the North and the South?

[Muba]: UNESCO was the main forum within which Third World leaders were able to freely debate and have endorsed the idea of an NWICO which, in my opinion, is no more that a legitimate demand so that the Third World may have access to international communication, considering that we are witnessing the world transforming into a planetary village. Some great powers, key donors to UNESCO, which did not accept this debate pulled out because according to them, the politicization of the debate did not safeguard their interests. Thus, they plunged the organization into a very serious financial crisis. UNESCO had to tell the Third World countries to hide the NWICO issue under a bush while fighting to ensure that the IPDC (International Program for the Development of Communications) is carried on outside any kind of ideological contest.

GABON

Radio Plans To Improve Reception, Install Receive Station, Invest in Cable TV

AB1011221690 Libreville Africa No. 1 in French 1230 GMT 7 Nov 90

[Text] The board of directors of Africa No. 1 radio station met on Monday in Libreville. As part of its development program, Africa No. 1, which now has 18 million listeners, has as its first objective to increase its audience by improving the quality of its reception. To this end, our company plans to lend a transmitter to the Ivorian Government to be situated at Akuedo, near Abidjan in order to improve the reception of its transmissions to West Africa. Another project is the installation of a receiving satellite earth station at the Moyabi Transmitter Station, whose coverage area will be increased and renovated. This will help improve international relays by abolishing the microwave links which have become too cumbersome and ineffective.

Furthermore, in its efforts to diversify its activities, Africa No. 1 plans to buy 20 percent of the 750-million CFA francs capital shares in Canal-Horizon of Gabon, a new cable television network which is to be created by 1992. It should also be noted that the board of directors also decided to buy the headquarters of Africa No. 1 in Libreville.

Finally, it was estimated at the board meeting that Africa No. 1 will earn 254.8 million CFA francs in profits this year, an increase of 10.6 percent over last year's performance. This shows our company's financial stability.

Top Priority For Telecommunications Development

HK1311064890 Beijing CHINA DAILY in English 13 Nov 90 p 1

[By staff reporter Gao Jinan]

[Text] Modern technology and equipment will be the major elements in the nation's telecommunication plan over the coming decade, Premier Li Peng said yesterday.

Addressing the opening session of the Asia-Pacific Telecommunity conference in Beijing, Li said that updated transmission technologies, such as microwave, optical fibre and satellite, should be widely used in China.

The Premier told the more than 100 foreign and Chinese participants that more programmed digital telephone exchanges will be installed in the next decade.

As a necessary part of the nation's economic infrastructure and a requirement for success of the opening poilcy, China has attached great importance to the development of telecommunications in the past 10 years.

In drafting the national development plans for the coming decade, Li revealed, telecommunications will be given top priority.

He assured participants at the conference that China will firmly carry on the reform and open policies initiated by Deng Xiaoping.

With the expected State investment, Li believed that Chinese telecommunications industry will witness a faster development in the coming 10 years.

At present, the national telephone exchange capacity stands at 20 million lines with 13 million telephone sets installed across the country, said Yang Taifang, Minister of Posts and Telecommunications.

Currently, there is about one telephone for every 100 Chinese people on average, and the ratio in some large and coastal cities is greater than 10 for every 100.

Yang said at the meeting that over 600 Chinese cities have joined the national automatic telephone network and from over 200 cities it is possible to dial any number in 182 countries and regions. That service as well as inter-city service, is already available for government agencies, foreign embassies, large businesses and similar users.

According to the ministry's long-term plan, the number of telephones will reach 33.6 million sets by the year 2000, marking a tremendous step forward for the nation's telecommunications.

The figure means that there will be 2.8 telephone sets for every 100 people across the country on the average.

Yang said that inter-city transmission will mainly depend on digital optical fibre, satellite and microwave communications, as Premier Li had suggested.

By the end of this century, the national telecommunications network will be automatized, Yang said.

While stressing a self-reliance policy, China will enhance its cooperation with all Asian-Pacific Telecommunity member countries and world telecom leaders to aid the modernization drive in telecommunications, the minister said.

The Asian-Pacific Telecommunity, founded in 1979, has 22 member countries, two associate member countries and 17 non-voting members. China, enjoying good cooperation ties with the organization, is one of its founders. This was its first conference held in China.

Steel Mast Installed on CCTV Transmitter Tower

OW1711085590 Beijing Television Service in Mandarin 1100 GMT 14 Nov 90

[From the "National Hookup" program]

[Text] The installation of the steel mast, the last-stage construction of the transmission tower of the Chinese Central Television Station [CCTV], was completed today. The tower is a major state construction project. [video pans slowly, from bottom to top, to show a tall, cylindrical tower and the steel mast on its top]

The 83-meter-long steel mast is comprised of 12 sections, with a total weight of 181 metric tons. The assemblage of such a large structure at a place more than 300 meters above ground was unprecendented in China. [video cuts to show closeup of the metal mast, and high-angle view of the ground below, and shots of other parts of the steel work]

Now that the steel mast has been installed, the antennae of eight television channels and 10 FM broadcast stations will be installed on it.

The Installation Engineering Corporation under the Ministry of Radio, Cinema, and Television, which undertook the installation of the steel mast, is the only specialized corporation serving China's radio and television departments. During the last 35 years, workers of the corporation have completed more than 1,000 engineering projects in all provinces, municipalities, and autonomous regions in China as well as in more than 30 countries in Asia, Africa, and Europe. In addition to the installation of the steel mast, the corporation, which has many engineers and workers experienced in installing high towers, also built the tower of the well-known Beijing Exhibition Center as well as the CCTV tower that supports the steel mast.

Xinjiang Site of First Desert TV Transmission Station

OW1711195490 Beijing XINHUA Domestic Service in Chinese 2113 GMT 16 Nov 90

[Text] Urumqi, 17 Nov (XINHUA)—China's first television station in the desert—the Lunnan Television Transmission Station of the Tarim Petroleum Project Command—was recently completed and became operational in the depths of the northwestern Taklimakan Shamo [desert]. The station's 103-meter television transmission tower thrusts into the sky, presenting a magnificent scene.

Direct Telephone Communication With USSR

Urumqi Linked to Alma Ata

OW1611090790 Beijing XINHUA in English 0238 GMT 16 Nov 90

[Text] Urumqi, November 16 (XINHUA)—Telephone communication between Urumqi, capital of China's Xinjiang Uygur Autonomous Region, and Alma Ata, capital of the Soviet Republic of Kazakhstan, officially opened today.

This is the first telephone communication service between the two border areas.

Experts say local residents in the major counties and cities in Xinjiang can make direct telephone calls to the major areas of Kazakhstan. These direct calls are much clearer and much more efficient than previous international telephone calls that went through Beijing and Moscow.

The telephone communication service opened under an agreement that was reached by the two countries' ministries of post and telecommunications on September 10 of this year.

More on Link

OW1911045990 Beijing in Russian to the USSR 1900 GMT 17 Nov 90

[Excerpts] Direct telephone communications between China's Xinjiang Uygur Autonomous Region and the Kazakh Soviet Socialist Republic were officially opened on 15 November. [passage omitted] This link includes telephone lines between Urumqi, administrative center of Xinjiang, and Aima-Ata, capital of Kazakh SSR; between Yining in Xinjiang and Alma-Ata, and also between the border-crossing points of Korgas in Xinjiang and Panfilov in Kazakh SSR. With the establishment of this telephone link, various regions of Xinjiang and Kazakh SSR can now contact each other.

Circular Bans Unauthorized Use of Communications Satellites

OW1511205190 Beijing XINHUA Domestic Service in Chinese 1445 GMT 15 Nov 90

[Text] Beijing, 15 Nov (XINHUA)—The Ministry of Posts and Telecommunications and the State Radio Regulatory Committee recently issued a circular on strictly banning unauthorized transmission of signals to communications satellites.

The circular says: Since China began reform and opening to the outside world, it has made great progress in use of communications satellites. At present, over 10,000 television stations receive the programs of China Central Television Station and China Educational Television Station via satellite. Over 100 satellite communications earth stations are performing satellite communications tasks. However, some unidentified signals beamed at repeaters on domestic communications satellites and international communications satellites rented (purchased) by China are frequently discovered. The signals create serious disturbances to our satellite communications (including public and special long distance telephone and telegram service, and the transmission of data, fax, television and radio programs).

In order to maintain radio wave order in the sky, enforce radio communications discipline, and ensure normal operation of communications satellites, the circular emphasizes the need to enforce communications discipline and strictly ban unauthorized transmission of signals towards communications satellites.

The circular says: If any organization needs to test signal transmission beamed at communications satellites and the test is not included in the approved frequency plan, it should file an application with the Ministry of Posts and Communications one month before the test. After obtaining the consent of the ministry, it should, in accordance with state regulations on radio wave control, submit a request for the test to the State Radio Regulatory Committee for approval. The request should contain such information as date, time and frequency of transmission, upward EIRP [effective isotropic radiated power], frequency band width, monitorable station signal and call sign.

The circular points out: From now on, whoever beams unauthorized signal transmission at communications satellites, once discovered, will be dealt with in accordance with the state radio wave control regulations.

CAMBODIA

Satellite Earth Station Inaugurated in Phnom Penh

First Modern Link With Outside World

BK1411102990 Hong Kong AFP in English 0943 GMT 14 Nov 90

[Text] Phnom Penh, Nov 14 (AFP)—Cambodia's first modern telecommunications link with the outside world was opened here Wednesday in a champagne ceremony.

The Australian Government's OTC International had to beat off stiff competition from France Cable and Radio and other bids from Europe, Canada and South Korea to win the right to install its Vista earth satellite station in the Cambodian capital, OTC official David Wicks said.

The station, connected to the Intelsat system and in limited use since October 10, is located on the site of the Roman Catholic cathedral dismantled brick by brick by the Khmer Rouge during their 1975-79 rule here.

OTC Director John Menadue, opening the station before Minister for Communications, Transport and Posts Ros Chun, said, "the completion of this project will, we hope, be a major step towards ending Cambodia's international isolation."

He said OTC's decision to establish a foothold in war-torn Cambodia was linked to the Australian government's major political role in trying to forge a settlement between Phnom Penh and the three-party resistance, which includes the Khmer Rouge.

Australian Foreign Minister Gareth Evans later spoke on the system to a lunch gathering direct from Australia.

"We hope this will be the dawn of a new age of peace for Cambodia," he said, adding, "it will ... Make possible very close business and economic links between our two countries."

Canberra does not recognise any of the four warring parties but has not barred trade with Indochina, and OTC has also built earth stations in Vietnam and Laos.

OTC's bid to build a satellite earth station in Phnom Penh was launched in 1987, Mr. Wicks said, adding that OTC offered a 10-year multi-stage contract.

The system would be expanded stage by stage with each step being taken only if the volume of traffic made it commercially viable.

Linked to the Intelsat satellite network, the 7.5-metre Vista station here currently provides seven telephone and fax lines and one for telex and telegramme traffic.

The system is manually operated, but a digital exchange is being installed and should be in operation in the first week of December, Mr. Wicks said.

This would allow some 300 subscribers to use International Direct Dial (IDD) service, while callers from overseas would be able to reach any number here using IDD.

The system can be further modified to provide hundreds of lines when needed.

Phnom Penh used to rely on the antiquated Soviet Intersputnik system for communications with the outside world with just four lines out of the country—two to Moscow and one each to Hanoi and Ho Chi Minh City in Vietnam.

Minister Inaugurates Station

BK1511080190 Phnom Penh Domestic Service in Cambodian 0430 GMT 15 Nov 90

[Summary] The Posts and Telecommunications Department on 14 November organized a ceremony to inaugurate the Vista earth satellite station, built with the cooperation of the Australian Government's OTC International. The construction of the station started on 17 May 1990 with an investment of 5.5 million Riels [Cambodian currency] from the Cambodian side and U.S.$2.78 million from the Australian side. The station began temporary service on 10 October.

Present at the inauguration ceremony were Ros Chhun, member of the party Central Committee and minister of communications, transport, and posts; Kim Yin, director of the Cambodian radio station; Kim Seap, deputy comminications minister; and Top Sam, deputy trade minister; the director of OTC; and a number of technicians.

This is only the first stage of the agreement; the next phase is the construction of a network of 5,000 telephone and telegraphic lines. With this network Cambodian telecommunications can be linked to international networks through the OTP [expansion unknown] station.

THAILAND

Contract Signed on Satellite TV Broadcasting System

BK1711095390 Bangkok Domestic Service in Thai 0000 GMT 17 Nov 90

[Text] A contract was signed on Friday, 16 November, at the Government Public Relations Department for the procurement and installation of a signal switching system for a nationwide television broadcasting network via satellite. Signing the contract at a ceremony held in the presence of high officials and invited guests were Thawat Meksawan, director general of the government Public Relations Department, and Thongchai Lamsam, managing director of the Loxley Bangkok Company.

The signal switching system for the television network via satellite, which is under the jurisdiction of the Government Public Relations Department and cost 168

million baht, was earlier approved by the Cabinet. It marks the first step toward modernizing the television network using satellite signals, which will replace the land-based microwave system. The first stage of the installation will link Thai television channel 11 in Bangkok with stations in Ubon Ratchathani, Sakon Nakhon, Surin, Loei, Mae Hong Son, Ranong, Rayong, and Trang. The second phase of the project will cover Khon Kaen, Lampang, Phitsanulok, Phetchabun, Chumphon, Nakhon Sawan, Nakhon Ratchasima, Trat, Prachuap Khirikhan, Surat Thani, Nakhon Si Thammarat, and Songkhla.

The system will enable television viewers all over the country to receive clear signals from Bangkok and will allow the state television network to serve the people and the state more efficiently.

VIETNAM

Vietnam Expanding Capability in Telecommunications

91P30028 Hanoi KHOA HOC VA DOI SONG in Vietnamese 6 Sep 90 p 2

[Editorial Report] The Hanoi weekly newspaper KHOA HOC VA DOI SONG reported on 6 September that the SRV post office, radio, and TV broadcasting systems have been using satellite receiving ground stations since 1980 for communications, radio and TV broadcasting, and weather forecasting. According to the newspaper, presently, there are six satellite receiving ground stations in Hanoi and Ho Chi Minh City: LOTUS 1, LOTUS 2, two INTELSAT stations, and two AUSSAT stations built with the help of Australia. There are also "tens of EKRAN receiving stations serving Soviet specialists" that are scattered from Lao Cai District, Hoang Lien Son Province, to the Tay Nguyen, Vung Tau, and Con Dao areas, the newspaper reported. Recently, the radio and TV broadcasting sector has also imported satellite dishes that can directly receive broadcasting programs from the PALAPA, ASIASAT, and other satellites.

Vietnam To Upgrade International Network

90AN0417 Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 3 Sep 90 p 16

[Article: "OTC Lands Major Contract"]

[Text] Australia's telecoms operators have obviously targeted Vietnam as an area of considerable opportunity in telecommunications. Both OTC and Telecom Australia have had a modest degree of success to date in picking up contracts to oversee development of certain aspects of the Vietnamese network. Now, OTC has landed the big one—an Australian $250 million contract to assist in the modernisation, expansion and management of Vietnam's international network for an initial 10-year period. OTC claims that this is the largest overseas contract ever won by an Australian telecommunications company.

The new Business Cooperation Contract calls for the implementation of a major international network development plan and investment in key domestic infrastructure projects. The agreement is between the Directorate General of Posts and Telecommunications in Vietnam and OTC International Limited.

It is thought that at least two digital international telephone exchanges will be required to augment infrastructural improvements already made by OTC in the last two or three years. OTC has already supplied a small digital exchange, a microwave network manufactured by AWA and two satellite earth stations in Hanoi and Ho Chi Minh City. The company also has a revenue-sharing agreement with DGPT covering international calls over a six-year period.

Telecom Australia was recently awarded a $15 million contract to supply a fibre-optic link between Hanoi and Ho Chi Minh City to be completed by the end of 1991.

The two companies may be benefitting from the lack of U.S. involvement in Vietnam since diplomatic and trade relations were broken off at the end of the Vietnam War. OTC indicated that it had been supported by a cooperative Australian diplomatic presence. The two companies do not, however, have a monopoly on the Vietnamese market. British Telecom, in association with STC, GPT and PKI, has won contracts for fibre-optic cables, Alcatel has supplied switching equipment while Cuba has also assisted DGPT.

Perhaps the next market where OTC may be expected to announce further contacts is Cambodia. OTC has already installed satellite equipment in that country as well.

HUNGARY

Joint Venture With Austrian Firm Schrack Telecom Described

91WT0022a Budapest COMPUTERWORLD/ SZAMITASTECHNIKA in Hungarian 20 Sep 90 p 1

[Unattributed article: "Diosd On Line"]

[Text] We cannot complain, the domestic offering of telephone equipment—from the simplest sets through small capacity subexchanges to gigantic digital main exchanges—is growing richer almost day by day. We are already embarassed by riches—all the leading exchange manufacturers of the world are beginning some sort of joint venture with Hungarian partners, most of whom are communications engineering or computer technology firms. We can report the founding of yet another mixed enterprise.

On 6 September, at the headquarters of Datacoop in Diosd, an agreement concerning the Schrack Telecom Company, founded with 50-50 Hungarian-Austrian capital, was signed before several Hungarian and a busload of Austrian representatives of the press. The owners on the Hungarian side are the Datacoop Company and Comex Limited and, on the Austrian side, Schrack.

Ferenc Bindics, president and director-general of Datacoop, reported that his firm, founded 8 years ago and increasing its capital a thousand times since, had begun to change its profile. On the basis of the agreement signed with the neighbors they want to undertake an ever greater role in the manufacture of smaller capacity subexchanges and various telephone sets. He did not burden the audience with concrete production data—and we could not learn these later either—but during the ceremony held in the manufacturing hall everyone could see that on the other side of the hall they were assembling several types of modularly expandable exchanges.

The "old" Post Office founded Comex Limited. According to its director, Balazs Csiszar, the adoption of modern subexchanges is especially important for the corporation. Fifty percent of the enterprise exchanges operated and maintained by them, with a total capacity of 400,000 lines and worth about 3 billion forints, is completely obsolete. So they are especially interested in the success of the new undertaking. Domestic manufacture and the modern nature of the products will make it much easier for them to carry out their tasks, from which they expect a turnover of at least a billion forints this year.

Schrack, employing 2,000 workers and entirely privately owned, is the biggest shipper of telephone and transmission equipment in Austria, as is proven by their annual turnover of 2.5 billion schillings. For them the Hungarian connection means not only cheap labor but also an expansion of their marketing opportunities.

Istvan Szini, the Hungarian director of the Schrack Telecom Company and also the domestic representative of the Austrian firm, praised the advantages of the locale and the good name of the partners and their products.

At present Datacoop will manufacture the following exchanges developed by Schrack: the Multidat-180 digital electronic subexchange, which can be expanded from 6/30 to 20/200 lines; the Minipoint 1/5 in-house telephone exchange; the DCD Contakt 9 boss-secretary equipment; and the Harmony telephone sets, in various colors, which they have adapted to the (weaker) technical parameters of the domestic telephone network.

Deutsche Welle Television Broadcast From Pecs

LD1111203190 Budapest MTI in English 1736 GMT 11 Nov 90

[Text] Budapest, November 10 (MTI)—The Deutsche Welle German television company began broadcasting its East European television magazine programme in Hungary, the first country in the region. The first programme of the 30-minute series, aired every two weeks, was aired from Pecs, southern Hungary, on Saturday, and was also seen on the central programme (channel one) of Hungarian Television.

Deutsche Welle intends the 'European revolving stage' programme to mediate themes of interest to the people living in Eastern Europe, including economic, social and political information related to the building of the European house. The German television company will continue to prepare the programme in cooperation with the Pecs district office and minority studio of Hungarian Television. The Hungarian sub-titles for the German-language programme are also prepared in Pecs.

YUGOSLAVIA

Slovene TV to Relay Yutel Programs Experimentally

LD1611125190 Belgrade TANJUG Domestic Service in Serbo-Croatian 0928 GMT 16 Nov 90

[Text] Ljubljana, 16 Nov (TANJUG)—From 3 December, Slovene TV will transmit Yutel programs on experimental basis. It will relay Yutel programs on its second channel late at night when it finishes transmitting its scheduled programs. "Slovene TV is trying to promote an important principle that the Slovene public has the right to a broad range of information and to be informed about Slovenia's place in Yugoslav and the world, as well as the principles of openness of Slovene TV and competition at a time when an increasing number of media blockades in Yugoslavia are being erected," a statement by Slovene tv underlines.

The final decision on the possible regular transmission of Yutel programs will be adopted by a new Workers' Council of Slovene TV. It is envisioned that Yutel programs will be broadcast independently, that is, not

within the framework of the Slovene TV network, as soon as technical problems are resolved. With this latest addition to its programs, Slovene TV wants, above all, to make a broader range of information available to the viewers. This TV station will be interested to find out from viewers what they think about its latest initiative, the statement stresses.

First Private Television on Air in Macedonia

AU0811222090 Belgrade POLITIKA in Serbo-Croatian 4 Nov 90 p 12

[S. M. report: "Stip Television on Air 12 Hours a Day"]

[Text] Stip, 3 Nov—Television viewers from the Stip commune can watch an experimental program of the first private television station in Macedonia for 12 hours a day. Stip Television operates as part of the firm Teko which is owned by Petre Varbinov and Mile Kokotov. The programming consists of television spots, commercials, films, and special programs which last for a total of 12 hours a day.

Yugoslav Programs To Run on French Satellite Channel

AU1211110790 Belgrade Domestic Service in Serbo-Croatian 1000 GMT 12 Nov 90

[Text] On 22 November, the Yugoslav Television and Radio network becomes a user of the French satellite channel, La Sept. Members of the Yugoslav Radio and Television network will have the right to broadcast approximately five hours of programs per week on this channel. Thus, the Yugoslav Radio and Television network will be able to directly offer its programs to Europe.

Information Commission Endorses Public Media Law

LD1311234590 Belgrade TANJUG Domestic Service in Serbo-Croatian 1757 GMT 13 Nov 90

[Excerpts] Belgrade, 13 Nov (TANJUG)—The law on the public information system deregulates this field of activity, and expresses the spirit of the reforms, the SFRY Assembly Commission for Information concluded today, and endorsed the proposed law on information. [passage omitted]

According to Federal Executive Council [FEC] Secretary for Information Darko Marin, the law abolishes monopoly over public information media, gives equal rights to founders of information media, and introduces competition in this field. It also forbids all bans on distribution of newspapers and magazines, as well as all forms of censorship. At the same time, it strengthens the responsibility of those who are used as sources of information, authors, and chief and responsible editors. [passage omitted]

Marin positively appraised the TANJUG program proposal for the next year. The proposal is conceived with a view to the interest of the entire country, and the federal units, too. During the last year, TANJUG broadcast 530,000 items, and in doing so it joined a league of top world agencies. In the next year TANJUG will introduce new programms aimed at making a profit. The main bearer of this drive will be TANJUG's economic unit. Marin also stressed that TANJUG will, however, have to undergo a partial cadre restructuring, and, perhaps, some radical changes. [passage omitted]

Later on the Commission supported the main program principles of the Yugoslav Television channel YUTEL. It concluded that the FED and its Secretariat for Information should present the YUTEL program and organization concept to the SFRY Assembly. In the meantime, the experimental transmission of YUTEL programs should be uninterrupted.

Prior to this, FEC Secretary for Information Darko Marin recalled that the proposal to form YUTEL had been launched within the framework of the Yugoslav Radio and Television Network, and that talks about this have been going on for more than a year. In the meantime, the information field has become more region-oriented and closed to information coming from other regions, so Yugoslav has found itself without a television channel which objectively and throughly covers events throughout the country. We had concluded that this is unacceptable, Marin said, and therefore launched the initiative to speed up negotiations regarding an all-Yugoslav Television channel. [passage omitted]

It was concluded that Radio Yugoslavia should found YUTEL, because as a rule television channels have been so far founded by radio stations. Apart from this, YUTEL would strengthen its links with other radio and television centers in the country through Radio Yugoslavia, as this radio station is a member of the Yugoslav Radio and Television Network.

Marin underlined that the FEC proposes to the SFRY Assembly that Radio Yugoslavia be renamed Yugoslav Radio and Television [Radio- Televizija Jugoslavija]. This enterprise would house under the same roof Radio Yugoslavia and YUTEL. The SFRY Assembly will be their founder.

With regard to financing YUTEL, Marian mentioned the possibility of securing some funds from the rescheduled federal budget, and noted that YUTEL equipment, worth 220 million dinars, "belongs to the Yugoslav state" and that its premises also "belong to the Yugoslav state." So far, Radio Yugoslavia set aside 15,000 dinars for YUTEL, and the FEC set aside 3,600,000 dinars out of its reserves. No money has been taken from the federal treasury. Regarding the building at Marx and Engels Square, occupied by YUTEL, Marian noted that it "also belongs to the SFRY." As far as transmitters on Mt. Avala and Mt. Fruska Gora are concerned, the FEC secured all relevant permissions envisaged by federal laws, he said.

Those preventing YUTEL from working are breaching not only federal laws but also international conventions on free flow of information. The defense of YUTEL is the defense of citizens' constitutional rights to be informed fully. The FEC and the SFRY Assembly have the duty to inform citizens fully about events in the country, Marian concluded. [passage omitted]

ARGENTINA

REUTER Launches Interactive Communications System

PY1011010090 Buenos Aires DYN in Spanish 1652 GMT 6 Nov 90

[Text] Buenos Aires, 6 Nov (DYN)—Today the REUTER director for Latin America, Enrique Jara, announced the launching of the first international interactive communications system to be operated by a private firm for news reception and transmission via satellite, Intelsat, for all of Latin America.

Jara said the new transmission system will allow users to receive "a better quality service because it eliminates intermediate connections;" up to now transmissions had to go through several intermediate stages through Entel [National Telecommunications Enterprise] satellite stations.

REUTER now operates from its own standard F-1 satellite earth station installed in its offices at Madero Tower. The station includes a 4.57 meter parabolic antenna and electronic equipment capable of handling bidirectional traffic carrying computerized information at a speed of 256 kilobits a second.

The connection is made through the Intelsat F VI 2 satellite at a 335 degrees east geostationary equatorial orbit.

The other end is a satellite earth station of E 2 standard located at the REUTER teleport in Hayppauge, 90 km from New York.

The investment needed to mount the new transmission system was close to $1 million.

This new system will benefit Argentina, especially the media and business community, with its high quality direct communication system with the rest of the world. Clients will not pay higher fees for the service.

REUTER provides a broad variety of information services to the media and business community in 158 countries and receives reports from 160 stock and capital markets around the world.

REUTER's services are distributed through 200,000 video and teleprinter terminals. The agency also supplies information directly to subscribers' computers.

The agency has an agreement with DYN for the transmission of local information to Latin America.

PARAGUAY

New Antelco Earth Station Awaiting Japanese Aid

PY1811031090 Asuncion PATRIA in Spanish 16 Nov 90 p 4

[Text] The new earth station to be built by the National Telecommunications Administration (Antelco) could cost $30 million, including all equipment.

This information was provided by Colonel Miguel Cirilo Guanes, retired, president of the Antelco Executive Board, who said: "We are waiting for a message from the Japanese Government, which should arrive before the end of this year, to continue the negotiations to obtain credit and to begin preparations for the construction of the modern earth station."

Guanes indicated that the Japanese loan will probably be obtained early next year and that a call for construction bids would follow, as studies are well advanced. Guanes added: "The $30 million covers the construction of the new earth station and its equipment. The important aspect of this project is that the new station will have digital technology; national technicians will therefore have to be trained in operating the new station."

INTERNATIONAL AFFAIRS

Moroccan, Guinean News Agencies Establish Links

LD1611142490 Rabat MAP in english 1315 GMT 16 Nov 90

[Text] Rabat, Nov. 16 (MAP)—A cooperation accord protocol was signed here Thursday by the Moroccan News Agency 'MAP' and its Guinean peer 'AGP' to mainly disseminate the information of the two news agencies in Guinea and Morocco, respectively.

Under the accord, initialled by MAP and AGP general managers, Abdeljalil Fenjiro and Mohamed Conde, respectively, the two agencies will help their special envoys and correspondents when on mission in either country. It also provides for the connecting of the two agencies through a Rabat-Conakry Siplex line to transmit MAP Arabic service to Guinea. This is the first time a Maghreb news agency transmits in Arabic toward Africa. MAP also pledged to train and assist AGP staff, technicians and journalists and transmit AGP's information bulletin abroad via the high frequency facilities of the Tangiers' transmission station.

Nenashev Holds Press Conference on Television Restructuring

PM1611144590 Moscow IZVESTIYA in Russian 15 Nov 90 Union Edition p 6

[V. L. Arsenyev report: "Four Television Companies Instead of One Central Television"]

[Text] This was perhaps the most important news item announced at a press conference held by Mikhail Nenashev, chairman of the USSR State Committee for Television and Radio Broadcasting, 13 November.

It has been decided to give each Central Television channel full creative and commercial autonomy. The first program on Central Television, to give it its old name, will be the state information and arts channel. The founders include the president, the USSR Supreme Soviet, and the country's government, as M. Nenashev said. The second program—which he called "Sodruzhestvo" [Concord]—will be devoted to broadcasts of Russian television companies and union republic television studios. The third program will be taken up with broadcasts from the Moscow joint stock television association, whose founders, apart from the USSR State Committee for Television and Radio Broadcasting, will be the Moscow City Soviet, the Moscow Oblast Soviet, and various public organizations. And the State Committee for Television and Radio Broadcasting intends to create a fourth television company—which has been named "TV 21 Vek" [21st Century TV]—on the basis of the current educational program, and to invite creative unions and public organizations to be founders. The Leningrad television channel has been told to transform itself into a joint stock association, or rather a television association.

On instructions of the USSR State Committee for Television and Radio Broadcasting, this reorganization will promote the democratization of creative processes and strengthen the spirit of competition, and consequently raise the quality of broadcasting. And the fact that the State Committee for Television and Radio Broadcasting has shares everywhere was explained by the fact that it holds all the money and that the material and technical base is concentrated. "Without our participation," it was stressed, "the channels would simply not be able to stand on their own two feet." M. Nenashev also said that each of the editorial offices now existing Central Television will also be autonomous and will carry out work on agreements with the leadership of any of the future channels.

Members of the USSR State Committee for Television and Radio who attended the press conference spoke about the new broadcasts in quite a lot of detail—"From Six to Nine" (instead of "120 Minutes" on the first program on Central Television), "Midnight" (from 0000 hours until 0300 on the first program of All-Union radio) and others. It was promised that the volume of artistic broadcasts—in other words, the showing of films and concerts—would be increased, since there is too much politics, according to Central Television. M. Nenashev even quoted A. Solzhenitsyn who wrote that politics is not most people's paramount concern.

Journalists' questions directed to the leaders of the USSR State Committee for Television and Radio Broadcasting did not bring confusion into the planned course of the press conference. Even in cases where they appeared unpleasant. For example, the following question was asked: How should the demand by the USSR State Committee for Television and Radio Broadcasting that newspapers pay for the publication of television and radio programs be understood? M. Nenashev had just started saying that the question is being examined at the moment and that the USSR State Committee for Television and Radio Broadcasting does not want a conflict with the newspapers. Although in principle, he added, the newspaper space devoted to the publication of television and radio programs is worth money, in his opinion, and there should be a fee. They could pay, really. And V. Bogdanov, general director of the programs, said more precisely: "We suggest that the newspapers pay for services and for the fact that our dispatch service sends out lists of television programs. That is how we should be understood..."

IZVESTIYA asked about the situation concerning the introduction of subscription payments since, in the summer of this year, newspapers only had to mention this prospect, which was thought up by the USSR State Committee for Television and Radio Broadcasting, for letters from indignant fellow citizens to flood in. M. Nenashev referred to the experience of Western countries where there is also a subscription payment for using the state television channel. He added that this law will hardly be implemented in our country next year, and when the subscription payment is introduced, then it stands to reason, it will be taken into account who is poor and who is rich and there will be a differentiated scale.

By this reply alone you can see that changes are taking place in Central Television. And very significant ones. Whether they will make the viewers happy in every way, I for one could not say. At the same time relations between Central Television and Russian Television and Leningrad Television are too acute for this. Maybe that is why a specific time was not named exactly for the emergence of several television companies instead of one Central Television.

'Glasnet' Computer Network To Be Launched in USSR

LD1611163190 Moscow IZVESTIYA in Russian 16 Nov 90 Union Edition p 3

[V. Reshetnikov report under the "Details for IZVESTIYA" rubric: "Computerized Mail From the USSR"]

[Text] Thousands of Soviet organizations will soon have the pleasure of conducting international correspondence via the computer network "Glasnet."

It is being set up by the international foundation "For the Survival and Development of Mankind." Two branches of the foundation are funding the project—one in Washington, the other in Moscow. The former has allocated $25,000 to the implementation of the project, the latter—200,000 rubles.

The foundation is making this handsom, beneficial gesture toward Soviet organizations whose activity is not of a commercial nature. The idea of making a gift to our indigent academics, journalists, cultural figures, and computer specialists by introducing them into the global data network originated in the United States. "Glasnet'-'—the name of the computer network, formed by coupling the Russian word "glasnost" with the American [as published] word "net" (as in "network") is interpreted roughly as follows: free access for Soviet organizations to an innovation by U.S. scientific and technical progress.

Information exchange networks of this kind are indeed a relatively new invention. It was only some three years ago that "nonspecialists" begin to use them actively. Today "electronic mail" unites millions of computers. It originated in the late seventies and initially linked three computers in one U.S. research center. In the eighties many institutes and companies, combining their computers into a single network, ran into the problem of transmitted information failing to "link up." In other words, data often "overshot" its destination. In order to somehow get out of this situation, operators began to accompany their messages with their own commentaries. Soon a system of rules—"protocols"—was invented, with the aid of which computer operators were able to exchange data free of error.

The first large-scale information exchange computer network, operating via telephone communications lines, united the computers of several large U.S. universities. The money to set up this network was allocated by the Pentagon.

The "Glasnet" computer network counts on 5,000 subscribers. For a purely symbolic ruble payment they can all "enter into correspondence" with subscribers to the global information network APC (Association for the Progress of Computers), of which "Glasnet" will be a part.

"The advantages of 'electronic mail' over other types of communications network is first, that it is cheaper; second, it is quicker; and third, it does not require the addressee of the message to be present," explains David Kolkinz [name as transliterated], a U.S. specialist in computer communications who has been invited to Moscow as an adviser by the foundation "For the Survival and Development of Mankind." It is noteworthy that David previously worked for a military department and was involved in designing programs for ballistic missile attacks on the USSR. This work has made him a complete pacifist. He gave it up a long time ago, and now devotes himself exclusively to peaceful projects.

The U.S. experience, David went on to explain, has shown that the wide use of "electronic mail" has a very positive influence on the work of academics or enterprises. The "mail" significantly facilitates work on joint projects, and also access to data banks and information depositories all over the world.

'Free Voice of The Ukraine' Radio Starts Up

LD1411180790 Moscow Television Service in Russian 1330 GMT 14 Nov 90

[Summary] A new independent radio sation, "Free Voice of the Ukraine" [Vilnyy Holos Ukrayinyy], has started operating in Lvov. The station s emplovees see it as their objective to tell the truth about the history of the formation of Ukrainian statehood, about the national liberation movement in Western Ukraine, and about relations between religions.

Krivoy Rog Starts Local TV Transmissions

LD1411125290 Moscow Domestic Service in Russian 0500 GMT 14 Nov 90

[Text] A new TV studio in Krivoy Rog has started test transmissions. This TV complex was erected by efforts of the town's enterprises as a community-based site. The residents of Krivoy Rog, population 800,000, will henceforth have the opportunity of getting up to date information about the life of their town from the TV screen. Five nearby rural rayons are also in the zone of reliable reception.

EUROPEAN AFFAIRS

Progress in European HDTV Development Outlined

90WN0304A Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German 11 Sep 90 p 8

[Article by Karl Tetzner: "European High Definition Television Nearing Implementation: Extensive Agreement on Standard, Promotional Efforts To Popularize New System, Wait-and-See Attitude From Broadcasters"]

[Text] Munich, 10 Sep—After several years' work by the EUREKA '95 consortium, development of the European HDTV standard can be considered largely complete. The fundamentals, specified as 1250 lines and 50 frames per second in 16 x 9 format, and the details of the HD-MAC mode of transmission have been defined, and the international bodies have given their acceptance. Now begins the no less difficult preparation for the market with all its problems—receiver and studio technology, program planning, publicizing the "new TV", financing, and many other aspects become pertinent.

One example of what must be dealt with is the delaying action of the TV broadcasters. As with the introduction of color into the previously all black-and-white market in 1967, at ARD [Association of Public Broadcasters of the GDR] and ZDF [Second German TV] and at the new private broadcasters as well, there is a certain initial reluctance concerning HDTV. Significant investments, which can hardly be covered by additional revenues, whether through increases in subscriber fees or increased advertising income, are anticipated for new high definition television studios and for completely new programs. Furthermore, no one knows how viewers will react to HDTV once they are confronted with the high initial prices of the new receivers. And, finally, the average viewer is satisfied with the quality of today's picture and sound; he has grown up with it. A two-fold strategy has been developed to make the new palatable—at both the European and the national level.

In the European Community "Vision 1250-EEIG", established on 11 July in Strasbourg, will become active. 1250 is the number of lines in European HDTV and its trademark, so to speak, and EEIG stands for European Economic Interest Group, a type of European company only recently authorized. The first members are five industrial firms, including Philips, Nokia, and Thomson, three radio-TV broadcast organizations (BBC/United Kingdom, OFRTF/France, and RAI/Italy), as well as TV production companies and networks. Chairman of the board of directors of Vision 1250, Kurt Schips, a former member of the board at Bosch, sums up the objectives of the new organization succinctly as "to promote" and "to provide".

Schips starts from the assumption that for now and the near future filming equipment for HDTV programs will continue to be rare and not generally available, not to mention expensive. This can be remedied by leasing these systems—initially only to the members of "Vision 1250". After all, there are currently no more than five remote HDTV broadcast units in Europe. More of them and more HDTV cameras and other equipment must be acquired, for which an initial 120 million Ecu (approximately DM250 million) is available. This money comes from the "Committee of Sponsors", composed of the Brussels Commission and representatives of interested governments and relevant industrial firms. The "Vision 1250" office in Brussels with its 15 employees is financed from membership dues of 40,000 Ecu each per year. The express objective of all these efforts is the preparation of a significant inventory of HDTV programs for the beginning of the high definition era and even before that for promotional purposes. The motto "to promote" must be implemented in cooperation with the national HDTV platforms, which represent the second leg of the two-fold strategy mentioned.

Recently in Frankfurt, the "National HDTV Platform Germany" adopted a position paper at the suggestion of Federal Minister of Research Riesenhuber. Among the objectives are support and coordination of HDTV applications in the professional and semiprofessional arena, representation of common interests with Bonn and the EC, PR measures, and promotion of HDTV as a program production means and as a TV system.—The founding board consists of Cornelis Bossers, head of German Philips, and Albrecht Ziemer, technical director of ZDF. An office is being set up at the ZVEI (Central Union of Electrical and Electronics Engineering) in Frankfurt/Main.

More progress has been made elsewhere. The foundation Netherlands HDTV Platform became actively visible at the end of August at the international consumer electronics fair Firato in Amsterdam. In the "Blue Hall" HDTV programs produced by the Netherlands TV organizations NOS and NOB ran without interruption on projection sets; they were also shown at other places on the fairgrounds on home HDTV sets in 16 x 9 format. Furthermore, the public was able to obtain additional information about terms such as D2-MAC and HD-MAC, and about the new picture tubes, etc. at a special booth.

It is to be assumed that HDTV platforms will be formed in still other EC countries. Following the hardness test in Rome when the Italian TV company RAI transmitted and recorded six soccer games in their entirety using HDTV technology, at the end of July in Savolinna, Finland, the local opera festival was filmed using HDTV technology by the engineers of the Nokia company and the Finnish national broadcasting company YLE. The remote filming unit, built by BTS in Darmstadt, floated on a pontoon in the river in front of the castle, and the connection cable for the three cameras in the castle courtyard had to be run 300 meters through ice cold water. The British BBC is particularly active. Last year it produced the series "Ginger Tree" in HDTV; it ran in

the original on Japan's HDTV test system already in operation there and in England itself with 625 lines. In 1989 Wimbeldon tennis was recorded with 1250 lines. This was done again this year and it was even shown on a large screen in the sport complex. In contrast, ARD and ZDF are still holding back—not to mention the private TV broadcasters.

France, Germany Sign HDTV Agreement

91WT0019A Paris AFP SCIENCES in French 20 Sep 90 pp 19-20

[Text] Paris—After several months of reservations, the FRG confirmed its participation in the Franco-German satellite-broadcasting program using D2 Mac, the new European standard that is paving the way for the advent of high-definition television (HDTV).

According to a statement by postal ministers Mssr Paul Quiles and Christian Schwarz-Schilling, a protocol to that effect was signed in the FRG between the stations, industry representatives, Telekom—the public telecommunications company—and the West German Postal Ministry during the 56th Munich Franco-German summit.

The joint statement affirms France's decision that the French public television station Antenne 2 will be broadcast by TDF1/TDF2, as Paul Quiles had announced. Clear broadcasting of a general-program station on the live television satellite was one of the FRG's conditions for confirming its commitment to D2 Mac.

"The two governments are expressing their willingness to substantively pursue this route," affirms the statement. France and the FRG are therefore going to ask the European Commission to extend the life of its directive on D2 Mac television broadcasting. They will also starting thinking about second-generation live television broadcasting satellites in the coming weeks.

The D2 Mac standard is an intermediate step toward high-definition television (HDTV), which will provide viewers with near-cinema picture quality and digital sound comparable to compact disks (CD). An economic interest group (GIE) will be created in France to popularize the D2 Mac standard, still virtually unknown to the general public.

The decision to impose Antenne 2 on the satellite, though sealing Franco-German cooperation, nonetheless leaves many questions unanswered. First of all, the goverment's decision to use its right of preemption meant a halt to the German pay-TV station project Premiere, a subsidiary of Channel Plus and the West German communications giant Bertelsmann.

True, the president of Channel Plus, Andre Rousselet, had publicly announced he would agree to leave a spot open on the satellite if asked, in the name of Franco-German cooperation. But it happens that Channel Plus is also the victim of a breakdown on the TDF1 channel and its currently without an alternate satellite.

Clearly Channel Plus, which put a lot of effort into the satellite, will try to obtain guarantees to "safeguard" its system by demanding, for instance, a spot on TV SAT 1/TV SAT 2, the German counterpart of TDF1/TDF2. In any event, Channel Plus has already contacted the CSA [unsure of expansion] to discuss a possible redistribution of the satellite channels.

Another unknown is the financing involved in bringing A2 onto the satellite. Mr Philippe Guilhaume, Antenne 2 and FR3 CEO, estimates it at 250 million French francs a year. Officials at the Ministry of Communications believe that the financial burden of duplicating A2's hertzian shows on the satellite should be shared, and should not be shouldered by the station itself.

Recent Developments in European Fiber-Optic Networks

90AN0415 Chichester TELEFACTS in English Jul 90 pp 16-23

[Text]

Introduction

Much has been written covering the widespread deployment of fibre-optic technology in the United States and, particularly recently, in the UK. Emphasis has shifted in the last two years from deployment in the long-distance, trunk and junction networks to studies and field trials into the viability of deploying fibre in local networks, either to the kerb or to the home.

While the RBOCs have collectively begun a number of FTTH/FTTK (fibre-to-the home/fibre-to-the kerb) trials and are beginning to test the capabilities of MANs (metropolitan area networks), and British Telecom's TPON/BIDS trial is underway in Bishop's Stortford, little coverage has been given to the efforts of other European PTTs to determine the viability of these types of architecture.

This month, TELEFACTS reports on research it has been conducting over a three-month period into the use of fibre-optic technology in public telecommunications networks. Some preliminary, selected findings are reported here, concentrating on selected European PTTs.

Two significant conferences took place while the research was being conducted and some findings reported at the International Switching Symposium '90 in Stockholm and at the IEEE (Institute of Electrical and Electronics Engineers) workshop on Passive Optical Net works held near Heathrow Airport are included in the analysis.

The 435-page report itself, looking at the use of fibre worldwide, was published last month.

Belgium

Building on the success of cable TV in Belgium, the Belgian Government has asked RTT (Telephone and Telegraph Adminstration) to conduct experiments into providing broadband ISDN (integrated services digital network) services. Although fibre is essential for the provision of B-ISDN services, the degree of penetration of fibre-to-the-home or kerb has not yet been decided in Belgium and will, to a large extent, depend on the success of the experiments.

Subscriber take-up of CATV (Community Antenna Television) services in Belgium is one of the highest in Europe—95 percent of residences are connected to one of the 40 or so companies providing services. The telecommunications network and the CATV network are separate entities with the CATV network being installed by the private companies providing services and are constructed using co-axial tree and branch technology.

In October 1987, the Belgian Government signed a contract with RTT under which RTT and a number of telecommunications equipment manufacturers would design and effect a broadband ATM (Analog Time Module) experiment in Belgium by the end of 1992. RTT would finance 80 percent of the development cost and the manufacturers, working together as the Belgian Broadband Association, would finance the balance. A total of 500 man years are expected to be spent in R&D for the project. Alcatel Bell Telephone, Siemens-ATEA, Philips and Alcatel-Bell SDT are the telecommunications companies involved in the experiment.

The experiment itself is designed to study the technical and economic feasibility of B-ISDNs and to buld an experimental model. The aim is to achieve the integrated provision of distributive and interactive services such as videotelephony, high-speed data transfer, standard and high-definition TV (HDTV), audio distribution, video library access and narrowband ISDN.

The group has conceived the idea of providing services through what is to be termed Subscriber Group Equipment (SGE) in order to reduce the switching demands on local exchange exerted when TV subscribers hunt for channels to view. In the experiment between four and sixteen subscribers will be connected to the demonstration SGE, although the ultimate goal is to support up to 256 subscribers per SGE. Between 15 and 20 TV channels will be provided for each subscriber.

The basic network configuration allows for a distributive services centre, providing TV, audio services, etc., to be interconnected with an ATM local exchange which will switch ATM cell streams for incoming and outgoing links at 600 Mbit/s. The ATM switch is being developed by Alcatel Bell Telephone and RTT.

The ATM switch is connected to number of SGEs, being developed by Alcatel Bell-SDT, which provide subscribers with a number distributive TV channels and interactive services downstream and act as a concentrator/multiplexer for interactive information from 16 subscribers travelling upstream. The link between the local exchange and the SGE is provided by a primary access connection—a bidirectional fibre transporting cells conforming to the Synchronous Digital Hierarchy standard at 600 Mbit/s (full cell payload would be 662 Mbit/s).

The subscriber's premises network (SPN) equipment is being researched by Siemens-ATEA. It represents the network at the users premises and provides network access for all terminals located on the subscriber's premises through the Terminal Distribution Network (TDN). Several customer profiles are being researched including the residential SPN with three to five people (unlikely to require internal switching), the small business SPN (possibly requiring internal switching) and the business CPN varying from 100 to 1,000 users on distributed floors in the same building, to factory SPNs with a few thousand users disparately located, possibly up to 10 km apart.

A universal terminal interface is necessary and the group is developing both optical and co-axial interfaces. Additionally, a number of network topologies are being studied—tree, bus, ring and star, passive and active.

For large business installations the concept of a Broadband Network (BBN) backbone has been conceived. The BBN backbone will employ either a centralised or a ring switch to route signals between the network termination point and a large number of terminals. A number of access nodes, each acting as a TDN and supporting a number of terminals, are connected to either a centralised switch or a distributed switch such as the Orwell ring configured as a LAN.

Subscriber interactive access to the network will be through a number of possible terminals such as a videotelephone using a video-codec operating at between 2 and 5 Mbit/s, narrowband ISDN terminals at primary rate via a 2 Mbit/s gateway, ISDN-based PBXs (private branch exchanges) with primary rate access, and high-speed LAN (100 Mbit/s) interconnection. Distributive services will be received through standard TV sets with variable bit-rates (average 20 Mbit/s), HDTV sets with variable bit-rate (100 Mbit/s) and high-quality audio receivers.

For the experimental local broadband exchange an Alcatel System 12 digital ISDN exchange is to be adapted to provide signalling for primary rate ISDN access in the broadband switching network. This will act as a primary rate access module, interworking with the broadband exchange through a special exchange termination to the ATM node.

Trunk transmission between exchanges is being studied but will only be implemented as part of other broadband experiments such as the European Broadband Interconnection Trial (EBIT).

Finland

Responsibility for telecommunications network and service provision is shared between two organisations—Telecom Finland and the Association of Finnish Telephone Companies.

Telecom Finland has installed a number of concentrators (each for 256 subscribers) and subscriber multiplexers (for 120 subscribers) which connect subscribers' premises to local exchanges. The system uses 8 Mbit/s optical line terminals and both residential and business customers can be connected in this way.,

Fibre-to-the-Home (FTTH)

A consortium, comprising Telecom Finland, the Association and the telecommunications companies Nokia, Teleste and Lohja, is working with the State Technical Research Centre of Finland to conduct a national broadband research project, part of which covers R&D into fibre-to-the-home. The consortium is concentrating on the applications of FTTH technology to new residential areas and hopes to have achieved a penetration rate of "a few percent" by the end of this decade.

At present the consortium is conducting a laboratory scale trial on a digital multiplexer architecture for multioccupant domestic residences (such as apartments and blocks of flats) where, for areas containing a small number of individual houses, a Passive Optical Network (PON) architecture is being developed. The PON architecture is described as a FONET—Frequency Division Multiplexing Access, Passive Optical Network.

The prototypes are due to leave laboratory trials in 1992 when a series of field trials will begin.

Telecom Finland anticipates the first live customer connections to be tested around 1995.

The company stressed that the introduction of fibre into the access (subscriber) network wil give greater consideration to the economics of doing so but added that this is likely to be achieved through the implementation of a common fibre network for integrating the provision of telecommunications (including ISDN) and CATV services. It is thought that the final connection to subscribers may still be by conventional cable.

Both Telecom Finland and the Association of Telephone Companies in Finland were signatories to the 1989 Memorandum of Understanding covering the development of EBIT.

A further step towards the study of fibre in telecommunications network came in early 1990 when Telecom Finland became one of the world's first companies to decide to install a Metropolitan Area Network (MAN).

Alcatel Bell Telephone, the Belgian subsidiary of Alcatel NV, signed an agreement with Telecom to build MANs in Helsinki, Tampere and Lappeenranta to allow companies to interconnect Ethernet and Token Ring local area networks. The three MANs will themselves be interconnected to form a wide area fibre-optic network. The Alcatel system is manufactured under licence from QPSX Communications in Australia and allows interconnection of LANs, computers and PABXs (private automatic branch exchanges) at speeds of 34 or 140 Mbit/s across fibre-optic cables.

France

The use of fibre-optics for distribution of videocommunications—switched wideband videocommunications services—began in France in 1979 in the tourist resort of Biarritz. The network became operational in 1980 and services were inaugurated in 1984. A total of 12,000 fibre kilometres were used in the network which had 1,500 subscribers when it was inaugurated.

Due to the initial success of the Biarritz experiment, the French government, in November 1982, formulated its "Plan Cable", an ambitious project to create a distribution network which would take fibre to every home in France. New legislation was introduced to enable France Telecom to build multiservice teledistribution networks for telephone, TV, radio services and the like.

A total of 52 cities/towns/communities had signed up under the terms of the plan by the time it came to an end—after local governmental problems—in 1986. The original plan was to have six million homes passed by 1991 and 14 million homes by the year 2000.

The Plan Cable was made redundant by the Audiovisual Act of 1986 which allows private companies to construct and operate, without restrictions, cable networks under licence from local authorities.

Constructions in the 52 localities which signed the Plan Cable is still being conducted and should be completed by 1993-94.

However, due to an extremely high level of demand and to the high cost of providing subscriber equipment, very few cities will be served by competely fibre networks.

In the majority of cases, it has been necessary to restrict use of (multimode) fibre to providing the transport medium over which signals are carried between headend and distribution points. Final transmission to subscribers is over co-axial cable.

In effect, two types of network infrastructure have evolved, known as 0G and 1G (the coaxial termination network and the optical termination network respectively).

0G uses an optical fibre primary network and a coaxial distribution network . The number of localities which will have this type of network is 40. By 1994, 5 million homes are to be passed by this method, with an average construction rate of 900 000 homes annually. Over 30 of these networks were open at the end of 1988 and 2.87 million homes had been passed. All networks were

constructed and operated by France Telecom which describes itself as the largest technical operator of cabled networks in France.

Each of the current multimode fibres conveys one TV channel. From this year all new constructions will involve the use of monomode technology increasing the capacity of the fibres to eight TV channels each. No definite network topology—star or tree—has been stipulated to those building the networks in order to ensure fiberisation of the distribution network.

1G is subdivided into two network topologies—all-fibre or hybrid fibre/coaxial. The first topology—all-fibre—is being used in Paris (with a potential 1.5 million homes to be passed) and Montpellier, where a total of 72,000 homes have been passed. The transmission equipment is supplied by Velec-Met with Cables de Lyon supplying the cable.

The hybrid fibre/coax system, developed by Alcatel, is being used in twelve other cities with Cables de Lyon supplying fibre-optic cable. Cities covered include: Rennes (the first to open in 1987), Mantes, Evry, Gennevilliers, Massy, Marseille, Lille, Toulon, Tregor and Sevres-St Cloud-Suresnes. To date, 500,000 homes have been passed using this network with a further 900,000 homes to be passed between now and 1993. France Telecom is again responsible for construction and technical operation of these networks.

For the business community, France Telecom is deploying STC's Flexible Access System in an attempt to satiate the bandwidth demands of small and medium-sized businesses. France Telecom says the system is analogous to the system deployed by BT (British Telecom) in the City Fibre Network. Field trials of the system are being conducted in three areas of Paris. An agreement was also signed recently with AT&T to test one of its offerings.

The French Centre National d'Etudes des Telecommunications (CNET) is also experimenting with passive optical networks. Molene is a passive optical network concept which will allow one shared graded index multimode (50/125 microns) fibre with an operating wavelength of 850 nm to supply primary ISDN services to up to 12 subscribers over distances of up to 100 metres.

Molene could provide PRI services to between 70 percent and 90 percent of subscribers based on subscriber network topologies carried out by CNET.

An industrial version of Molene is to be tested in Paris next year, incorporating certain modifications to the experimental system. The trial version will supply PRI services to subscribers over a monomode fibre and only eight subscribers per splitter will be supported by a maximum of three splitters.

Further field trials other than that in Paris are also planned for the next two years.

West Germany

At the same time as the German government first conceived BIGFERN, its long-distance fibre-optic backbone network, it also announced that DBP (Deutsche Bundespost) would use experience gained in an earlier project, called BIGFON and conducted in Berlin, to install fibre-optic technology in the local networks with the aim of building the world's largest national switched optical fibre network for broadband services.

The idea was to link together fibre-optic overlay networks capable of supporting broadband services, to be constructed in key cities, using the routes laid down by BIGFERN.

The initial aim, as reported in 1985, was to create these fibre-optic overlay networks in 14 cities using a total of 72 local and transit exchanges. Then, a further 67 additional cities would be added to the national overlay network as demand increases.

Subsequent studies on the likely demand nationwide for broadband services, however, led the roll-out plans to be modified. Statistics gathered by the Bundespost indicated that an initial potential of 70,000 broadband subscribers could exist in West Germany by the end of this year and with the majority of these subscribers distributed between 29 cities it was therefore decided to restrict the initial services to those cities. DBP, thus, embarked on a programme to install fibre-optic overlay networks in these cities as part of its "Interim Broadband Network (IBN)" or Vorlaufer Breitbandnetz (VBN).

DBT (Deutsche Bundespost Telekom) emphasises use of the word "interim" in IBN. The network is seen as one of a series of steps developing the network from one consisting of a number of existing dedicated networks (telephony, telex, data transmission, teletex, etc.) through a 64 kbit/s ISDN to a broadband ISDN and, eventually, to a universal Integrated Broadband Communication Network. IBN has three main objectives: to satisfy existing broadband requirements, such as videoconferencing, prior to the introduction of a B-ISDN; to stimulate new broadband applications; and to gain operational, technical and economic experience.

By the end of this year, the local overlay networks will account for almost 250,000 of the 850-900,000 fibre kilometres installed throughout the West German network. The local overlay network in Berlin alone has some 30,000 fibre kilometeres installed.

Although all of the towns are not yeat integrated, DBT was able to launch the IBN and its broadband services to customers supported by sixteen exchanges, in 13 cities, in 1989.

Details of the network infrastructure were given recently at the International Switching Symposium held in Stockholm at the end of May/beginning of June. When the two-layered IBN became operational, three transit

broadband exchanges located in the strategic towns of Hannover, Duesseldorf and Frankfurt were brought online. Thirteen local exchanges feed, via 140 Mbit/s trunk routes, subscriber-dialled traffic to the transit exchanges.

It is thought that Essen has now been integrated with the network as a fourteenth city with the most likely transit exchange able to support Essen being in Duesseldorf.

Presently, the IBN has sufficient capacity to support 1,000 subscribers.

The IBN is being built as the result of a joint venture signed in 1986 between Deutsche Bundespost Telekom and the telecommunications companies ANT Nachrichtentechnik and Nixdorf AG. ANT is supplying broadband exchanges and video codecs for the network.

Each subscriber is connected to the overlay network in his region individually which leads to a relatively high installation cost per subscriber. Presently, subscribers can only obtain videoconferencing services—either self-dialled (only on national calls) or pre-booked. While revenues do not presently cover costs, DBT is confident that the introduction of more services later on in the project will make it economically viable.

DBT is also considering other technologies to make the installation of fibre-to-the-home more economically viable in association with Raynet (see second section, CATV/FTTH/FTTK for more information).

In an attempt to identify services which will be attractive to subscribers, DBT has initiated a number of trial applications for a small number of users using the IBN infrastructure.

One of these projects, costing $150 million and known as BERKOM, has been in commercial operation since December 1988, when it was officially opened by the German Minister for Communications, Mr. Christian Schwarz-Schilling. The BERKOM project is led by Detecon, the consultancy arm of the DBT, and aims to utilise the Berlin overlay network, allowing manufacturers and users to gain experience in using broadband techniques.

Alcatel's West German subsidiary, Standard Elektrik Lorenz, has been a major contributor to the BERKOM project since the project's inception in 1987. Alcatel's own research actually dates back to 1985 when it decided to develop a prototype broadband ISDN system for the public network, based around its fagship narrowband ISDN public exchange, the System 12.

Alcatel designed a system capable of expansion to support up to 10,000 subscribers by extending its normal ISDN system 12 by adding additional switching matrices for 2 Mbit/s and 140 Mbit/s channels, the key module of which is a space-division 16-by-16 switching matrix developed using CMOS (complementary metal oxide semiconductor) technology.

Alcatel says that transmission equipment has been installed for 30 subscribers to use the network connected at varying distances up to 30 km.

The second phase of the project will see the transmission of distributive services, such as CATV and stereo sound, introduced to the network.

More recently, Siemens demonstrated the first public application of broadband switching using ATM technology when it installed a new switch into the BERKOM network—the EWSD-B (Electronic Digital Switching System-B). The prototype switch has broadband capability up to 140 Mbit/s. The design and development of the ATM switching fabric was conducted jointly with Plessey Research and Italtel under the RACE (Research in Advanced Communications Technologies in Europe) project 1012: Broadband Local Network Technology. However, Siemens does not claim that the switch it is testing is a pure ATM switch. Rather it is a "node", or an extension of a narrowband STM switch with ATM modules attached to enable broadband connections.

In the field trial the ATM node, is linked to a Siemens ISDN EWSD to allow for access to both narrowband and broadband applications. Subscribers are linked to the ATM switch via fibre-optic cable which carries ATM signals—32-octet cells—to and from the switch at 140 Mbit/s, i.e., not the bit rate specified in the Synchronous Digital Hierarchy standard STM1 or 155 Mbit/s. For narrowband ISDN access, subscribers may also be connected to the EWSD-ISDN switch directly over a fibre line.

Applications demonstrated to Dr. Christian Schwarz-Schilling in January included video transmission in colour and transmission of medical images obtained by a computed tomography examination.

The network is also to test LAN interconnection, video communication application with varying bit rates (from 64 kbit/s to 34 Mbit/s), joint-editing applications over broadband channels, medical applications for X-ray picture archiving and retrieval and private networking of PABXs over an ATM network (using HICOM300 PBXs in the trial). All applications tests will see terminals connected to the ATM switch over fibre.

The company says that it is possible to migrate MAN technology to ATM technology. Siemens has licensed queued packet synchronous switching technology—on which MANs are likely to be based—from QPSX Communications Ltd of Australia.

Siemens also recently gained a licence to the Flexible Access System technology developed by GPT, a company in which it has acquired a major stake. It is thought that FAS technology could be used to extend subscriber access to the BERKOM network.

The company said it intends to use QPSX as a complement to ATM and to SONET which can act as a backbone for QPSX. Flexible access systems, such as

those used in parts of the UK network, can be upgraded to SONET capabilities if required. Thus, in the space of a few months, Siemens developed (or licensed/acquired) a complete fibre-optic transmission evolution from an access system to a transport system and a switching system.

Siemens indicated that the widespread installation of production versions of its broadband switch is likely to occur in the middle of this decade.

CATV/FTTH/FTTK

The construction of CATV networks and subsequent transport of signals over those networks remain the monopoly of DBT. Coaxial cable is exclusively used and DBT indicated recently that it has no immediate plans to construct networks from fibre-optic cable.

Official DBT projections put the pass rate at 17 million homes by the end of next year, representing 65 percent of all homes, while the mid-90s figure is 80 percent or 20 million homes.

Although DBT says that it has no immediate plans to use fibre in the construction of the cable TV networks, it is, however, conducting trials with Raynet's fibre-to-the-kerb LOC-2 equipment in Cologne—christened OPAL by the DBT, for Optische Anschlussleitung [Optical Subscriber's Line]. The experimentation does not stop with Raynet—a spokesman at the recent Communications '90 exhibition in the UK indicated that other companies had submitted "concepts" to the DBT for similar projects. However, these companies—including Siemens, Alcatel-SEL, Bosch/ANT and Kommunikation Elektroniks (formerly Kabelmittel)—had, all that time, yet to show products.

The Raynet trial will be in three phases. In the first phase, subscribers in an area of west Cologne will be provided with CATV and POTs over fibre-optic cable with copper drops to the subscriber. In total, 192 telephone lines and 96 CATV connections will be installed in homes and flats.

The system is described as a "shared-resource, co-deployed" CATV/telephony system. A single, shared fibre-optic cable runs from the local exchange to kerbsides in the locality. Subscriber interface units (SIUs), each supporting up to eight telephone drops and four cable TV drops, are connected to the fibre cable in a bus configuration. In the German trial, 24 SIUs will be connected proving the 24 x 8 = 192 telephone drops and 24 x 4 = 96 cable TV drops. OPAL was officially opened on schedule at the end of May.

The second and third phases of the trial will provide services to businesses in the Cologne area and expand domestic services to more subscribers. The five-year project, dating back to July 1988, will finish in 1993. Raynet says that it will try to at least equal the quality of the West German coaxial network which it says is the finest in the world in terms of picture quality. However, Raynet points out, the existing network cannot be upgraded to accept HDTV and D2MAC standard TV transmissions—unlike the LOC-2 system.

Spain

Much of what is happening in Spain currently is designed around the year 1992. In that year, most of Telefonica's infrastructure plans should be finished. Telefonica's capital expenditure programme amounts to 1,700 billion Pesetas over the period 1988-91. Expenditure last year increased 63 percent to 582,032 million Pesetas.

Just recently, Telefonica announced its "Strategic Plan" for 1990-94 aimed at putting more than five million lines into service in the next five years. Capital expenditure during the programme is projected at 3,000 billion Pesetas. In all, 7.8 million urban lines will be installed over the next five years, of which 98 percent will be based on digital technology.

Also in 1992 Barcelona hosts the Olympic Games and Seville hosts the World Trade Fair. The Madrid metropolitan network is also being substantially upgraded in preparation for the opening of the Single European Market and for Madrid's year as the European Culture Capital for 1992.

Each of the three cities will have their own fibre-optic networks installed linking together major local exchanges. Barcelona is expected to use some 27,000 fibre kilometres while Madrid will use some 2,100 kilometres of fibre-optic cable. Seville is reported to have been earmarked for 7,000 km of cable. In all, Telefonica has indicated more than 28,000 cable kilometres of fibre will be added to the network before 1992.

The main emphasis appears to be in metropolitan networks of the large towns and cities. The main reason for this approach is to ensure the interconnection of high-speed leased circuits provided as Telefonica's Ibermic network. The leased circuits provide subscribers with access to the network at speeds of up to 2 Mbit/s while transmission is between 2 and 565 Mbit/s. Transport is over fibre-optic cable and a number of trunk links have been provided to connect major business centres such as Madrid, Barcelona, Seville, Bilbao, Valencia and Leon.

Fibre-optic deployment began in Madrid in 1985 when a number of multimode fibre cables were used to interconnect the main exchanges in Madrid city centre.

For reasons of security Telefonica installed the cables in a ring configuration. This topology led to the concept of Anillos Urbanos—Urban Rings—and Telefonica has followed this path in recent years.

The urban rings are a combination of local, junction and trunk 565 Mbit/s routes, formed from cables of 16, 32 or 64 monomode fibres. In the short-term, Telefonica will install 20 rings in large urban/metropolitan areas with

each link using 64 fibres in each cable. In the medium-term, rings will be installed in all urban areas.

In provincial areas, 2, 8 and 34 Mbit/s sytems are used.

For modernisation of the Madrid network, three, almost concentric, rings are close to completion. The provincial ring connects 14 exchanges in towns some distance from Madrid—up to 60 km. A second ring, inside the first, connects exchanges in major towns in the peripheral or metropolitan Madrid area. A final ring connects major junction and local exchanges in the Madrid city area. Numerous other links connect the city's other exchanges.

The success of the Ibermic service and resultant demand for wideband services (>=2 Mbit/s) led Telefonica to develop the Anillo Urbano concept one step further. The company was to begin installing Anillos de Acceso or access rings in six central areas of Madrid in 1988 and 1989. However, by the end of 1989 only one such ring had been installed.

Anillos de Acceso are fibre-optic rings emanating from local exchanges, bringing all of the benefits of fibre to within reach of homes, but particularly businesses. A fibre-optic cable leaves a transmission node on an urban ring—normally a telephone exchange—and travels around a pre-determined area, returning to the node. Typical length of an access ring is 6 km. Subscribers can then attach terminal equipment to the access ring at the nearest junction point. Digital transmission systems of 2 Mbit/s and over are provided to gain access to the ring.

The only ring to be completed so far is the Anillo Sol in Madrid. Maximum distance between the ring and potential subscribers appears to be less than 300 metres although the ring is typically within 100-200 metres of most business/domestic residences.

CATV/FTTH/FTTK

The penetration of cable TV is not known but Telefonica appears to be sufficiently worried by the threat of by-pass from local CATV companies that it has initiated a number of studies covering the provision of fibre-to-the-kerb and fibre-to-the-home systems. A speaker from Telefonica at the recent IEEE Workshop on Passive Optical Networks in London, UK presented a paper summarising his company's rationale for introducing fibre to the local loop.

Prime reason was the threat of local data transmission bypass by local CATV companies. It seems CATV companies can route data traffic from modem to modem over private full-duplex circuit through CATV head-end. Other reasons cited for the fibre introduction were the threat from private networks and the necessity of fibre for supporting B-ISDN access.

Telefonica appears to have chosen a physical star/logical ring network topology using TDM/TDMA transmission providing fibre-to-the-kerb as one of the topologies to be tested. The network would then evolve to a physical star/logical star topology using passive splitting, wavelength division multiplexing and fibre-to-the-home for broadband service provision.

Telefonica has defined a strategic time-frame for the installation of fibre in the local loop to provide telephony to residential users. In 1990, network studies and trial design are to be completed with actual field trials beginning in 1991 and 1992. The Spanish PTO expects the first commercial installations to be in 1993/94 and around the end of the decade telephony services for all new installation will be provided by fibre.

It is not clear how these ideas fit in with Telefonica's recent decision to trial Raynet's LOC-2 fibre-to-the-kerb system. Although a passive optical network, Raynet's system is physical star/logical bus architecture and the field trial will begin at the end of this year. (And an even more recent decision to test AT&T fibre-to-the-home technology).

The Raynet trial will be in a number of phases. The first two phases will monitor the technological and economic aspects of providing telephony using fibre-to-the-kerb to 100 homes in a district of Madrid.

In the next phase, Telefonica will test the system for "enhanced" services and for volume deployment in the telephone network. This phase is scheduled to begin in the fourth quarter of 1991.

Subsequent phases will test whether the LOC system lends itself to accommodating and technology upgrades such as cable TV, AM video, high-speed data and, ultimately, SDH-based B-ISDN.

Turkey

The PTT has indicated that no companies in Turkey are licensed to provide cable TV services, although the PTT issued a tender for the turnkey supply of equipment for a cable-TV project. Under the project, cable-TV is to be supplied to three towns—Ankara, Istanbul and Izmir—by 1991. A trial cable-TV network already exists in Ankara where 100 km of fibre-optic cable to carry traffic from the network control centres to the various head-ends. Final drop to customers is by coaxial cable, however. A startype configuration is used for the distribution of signals. The PTT has said that it will extend the availability of the sevice to the rest of the nation in the near future.

The network used optical dividers and low-rate video codecs (2 x 70 Mbit/s CMI and 4 x 70 Mbit/s optical interface) experimentally. The PTT has subsequently determined that this equipment was suitable.

Fibre-To-The-Home

PTT says that it plans to provide fibre-to-the-kerb in the subscriber network where new network installation is taking place. Fibre-to-the-home for ISDN applications is to be provided in the future.

Summary

The research has shown that nearly every major PTT/PTO in Europe is conducting at least one study of the further applications of fibre in their networks. The types of study are diverse although the majority of them are being conducted within the scope of the RACE project.

Integrated Broadband Communications Testing Project

90AN0402 Brussels THE SPAG STANDARD in English Summer 90 p 4

[Article: "RACE Project Number R1087"]

[Text] This issue of THE SPAG STANDARD moves away from the CIM environment covered by the last two issues and takes a look at another EC initiative this time in the telecoms industry, in particular in the field of IBCN (Integrated Broadband Communications Network) environment.

The RACE Is On—PROVE-ing Ground for IBC

SPAG's (Standards Promotion Application Group) connection is through a specialised project within the EC programme RACE (R&D in Advanced Communications Technologies in Europe). The project in question is called PROVE (PROvision of VErification) and is concerned with IBC verification and testing methodology and tools.

PROVE builds upon the success of a previous RACE project—RSVP (RACE Strategy for Verification and Plan)—executed by a consortium of PTTs and representatives from both industry and users with SPAG acting as prime contractor during 1988.

Members of the PROVE consortium are: SPAG (prime contractor, Belgium); British Telecom (UK); Deutsche Bundespost Telekom (FRG); France Telecom (France); EOLAS Irish Science & Technology Agency (Ireland); Televerket (Sweden); Standard Elektrik Lorenz/Alcatel (FRG); Cap Sesa Region (France), Clemessy (France); Elektronik Centralen (Denmark); Hasler (Switzerland); Refer (Belgium); and NCC (UK) providing additional consultancy support.

PROVE is already over 18 months into its four-year working period (1989-1992). Following a successful 1989 audit, the RACE Central Office gave the consortium the go-ahead to initiate Verification Tool Development.

The total budget amounts to ECU 13.6 million. The CEC will contribute up to 50 percent of the budget, i.e., ECU 6.8 million. SPAG's nominal contribution is for 95 man months over four years with a net cost of ECU 816,000, of which ECU 220,000 were earmarked for the first year.

Project Objectives

- Concepts and Procedures:

Take a leading role to establish consensus on ISDN-BB (broadband) verification concepts, requirements and procedures (3 years).

- Interoperability Testing (IOP):

Establish methods and procedures for interoperability testing in ISDN-BB environment (4 years).

- Computer Aided Test Case Generation (CATG):

Define a methodology and recommendation for CATG (2 years). The study may result in prototype development depending on the results of the 1990 audit evaluation (over 2 years).

- Verification Tools:

Development of prototypes for the following verification tools (4 years):

— System access interface

— Call generator for load simulation

— Signalling control unit

Links With Standardisation Bodies

PROVE deliverables are providing the bridge between the work undertaken in RACE and the standardisation activities of both ETSI (European Telecommunications Standards Institute) and CCITT (Consultative Committee for International Telephone and Telegraph).

As far as Computer Aided Test Case Generation deliverables are concerned these are useful for both CCITT Study Group X (involved in Formal Description Techniques, Man-Machine Language and CHILL [CCITT High Level Language]), and ETSI's Advanced Test Methodology expert group as they provide essential working documents for further elaboration by these two standards groups. Deliverables from the consortium in the domain of IOP have, for example, triggered off the creation of a new working group in ETSI (ATM2) in 1991.

EC To Have Open Satellite Service Market

OW1511045890 Beijing XINHUA in English 0256 GMT 15 Nov 90

[Text] Brussels, November 14 (XINHUA)—The EC commission issued today a "green paper" laying down guidelines for an open satellite service market within the European Community.

The guidelines call for

—a total opening of the ground satellite installations and lifting of monopoly in satellite service market.

—reassuring the customers' rights of free access to satellite service.

—allowing the satellite companies to offer direct service to the customers.

—coordination in the 12 EC members to facilitate the EC-wide services.

Briefing the media on the paper, Filippo Maria Pandolfi, commission vice president in charge of scientific research and communication development, said the present EC management of satellite service is still the 1960s to 1970s vintage with the decision-making in the hands of communication and broadcasting departments of the community members.

He added the application of new technologies in the field has both boosted the EC capability to offer satellite service and expanded the market.

The paper will be revised by the EC Council of Ministers in charge of communication on December 14.

DENMARK

Government To Privatize Data Center

91WT0025A Copenhagen BERLINGSKE TIDENDE in Danish 27 Oct 90 p II 2

[Article by Lars Emtekaer: "Government Wants To Privatize Data Center"—first paragraph is BERLINGSKE TIDENDE introduction]

[Text] The government and the Social Democratic Party (SD) are discussing the privatization of the Data Center and making it the sixth element of Tele-Danmark. Already, Tele-Danmark is made up of Denmark's five telecommunications companies and will have annual sales of 18 billion kroner when the privatization has been completed.

The government and the Social Democratic Party are well along in the process of privatizing the EDP company Datacentral, which is owned jointly by the government and the municipalities.

If the privatization is completed, the company will be taken into the TeleDanmark holding company, which is to include the government's telecommunications service and the four other Danish telephone companies in the future, have annual sales of approximately 18 billion kroner and employ 18,000 people. The Data Center will be able to contribute with annual sales of approximately 1 billion kroner and 1,400 employees.

According to plan, TeleDanmark's share capital is to amount to 1.3 billion kroner, 49 percent of which is to be sold to private shareholders and the remainder is to be held by the government.

The Data Center's net capital is approximately 40 million kroner. With a profit of approximately 70 million kroner in 1989, that indicates a selling price on the order of 600 million to 800 million kroner.

The Data Center's managing director, Hans Henrik Ostergaard, confirmed the plan to BERLINGSKE TIDENDE.

"We have been informed that a proposal of that nature will be included in the discussions among the parties in the Folketing," Hans Henrik Ostergaard said.

"Seen from the Data Center's point of view, it seems to us that this is a desirable development because the new structure will result in advantages for us—and also for the telephone companies, we hope. We will be able to profit by each other's knowledge, and obtain a synergetic effect by that means," he said.

It is expected that TeleDanmark A/S will be able to take over 100 percent of the Data Center from the government. Director H.H. Ostergaard stresses the fact that the new structure will not inhibit the Data Center's ability to serve its big governmental customers since the government, with 51 percent of the shares in TeleDanmark, will have decisive influence and access to information. The Data Center also offers services to municipal and private enterprises.

If the political pieces fall into place, the Data Center will be converted to a corporation before it can become a part of TeleDanmark. That work will take up most of a year to accomplish, Director Ostergaard estimates.

Phone Network Restructuring Starts

91WT0021A Copenhagen BERLINGSKE TIDENDE in Danish 9 Oct 90 p II 4

[Article: "New Tele-Structure Under Way"—first paragraph is BERLINGSKE TIDENDE introduction]

[Text] Denmark's five telephone companies will be brought together in 1992 into a large, nation-wide network. But before that all the companies will be converted into stock companies.

Communications Minister Torben Rechendorff (Cons.) is ready to carry out the political agreement between the government and the Social Democratic Party on a restructuring of the telephone network. The minister is now seeking the approval of the Folketing's finance committee to establish the stock company, TeleDanmark, which in 1992 will unite the telephone companies into one concern.

KTAS, Jydsk Telefon, Fyns Telefon, Tele Sonderjylland, and Statens Teletjeneste will become subsidiary companies in TeleDanmark. In order to carry this out, all the concerns will become stock companies. Rechendorff is therefore seeking approval for Statens Teletjeneste and the cooperative company, Fyns Telefon, to be converted into state-owned stock companies beginning 1 January 1991.

TeleDanmark will receive a stock capital of 1.3 billion kroner. The state will own 51 percent of this, while the other 49 percent will be privately owned. The sale will begin in 1991.

Above all, the new phone network will put the Danish telephone system in a better position to deal with increasing economic competition. This will be accomplished, among other ways, by pooling research and development, but in no way is the intention to eliminate all competition among the subsidiary companies.

The plan is for the present private stockholders in KTAS and Jydsk Telefon to be able, up to 1 March of next year, to exchange their holdings at market price. If they choose not to exchange them before 1 March, the state will exercise its right to redeem them at the rate of 125.

FRANCE

France Telecom To Improve Audiotex Services

91WT0019B Paris LE MONDE in French 6 Oct 90 p 36

[Article: "Toward a National Telephone Booth"; first paragraph is LE MONDE introduction]

[Text] Under pressure from editors, France-Telecom is going to make information and telephone-message services more accessible. While trying, however, to avoid the slipups of the Pink Minitel.

By touch-dialing their telephones, callers can get spoken recordings, consult messages, the weather or their bank accounts, explore talking data banks, or let themselves be guided by artificial voices. All these techniques are lumped under the term Audiotex, or voice telematics. Simple, and accessible to 30 million telephones, Audiotex has a bright future. The technologies it uses, of storage and speech synthesis, are rapidly progressing and the price of materials is dropping, multiplying company applications (12 September LE MONDE).

But before it can become as familiar and useful to the general public as its written countpart, Videotex, Audiotex still needs a suitable legal and technical framework and a simple mode of access, requiring no training or subscription. In current telephone booths (surcharge numbers beginning with the prefix 36-65), message length is limited to two minutes, "telephone conviviality" (anonymous, live dialogues) is forbidden, and the user pays more if he calls from farther away. Moreover, these booths are regional, since France is divided into 9 self-contained "grids", forcing suppliers of the service to multiply investments. Contract prices for renting lines are very high. All these curbs on expansion of services are known and have been denounced for a long time—for example, by the FN2R, the National Federation of Radio Responders. (The latter has just won a case before the administrative court to repeal another restraint, the requirement to have a press joint-commission number to edit telephone services.)

Defining Ethical Rules

AFTEL (The French Telematics Association), composed of the principal Videotex editors, has just published a white book that lists such curbs, surveys the market as it now stands, and formulates proposals, notably on the role that France-Telecom should play. As far as AFTEL is concerned, the only scheme able to get Audiotex off the ground would involve national telephone boothes, charged by time used (unlimited) and not by distance, with several levels of prices and retrocession by France-Telecom to the editors, who would handle billing. In short, a plan close to the one for Videotex. "The market can only grow when services offered by France-Telecom change," says AFTEL president Mr Jean-Luc Lemart. "We are proposing to collaborate on that."

Cautiously, the public telephone company says it is ready for concerted action, but warns that it cannot commit itself without "prior definition of ethical rules and the means for enforcing them." Scalded by the controversies surrounding the Pink Minitel, the administration clearly does not want be accused again of pimping via the public voice. Likewise, it intends to strictly limit the possibilities of calls to users by automatons, a modern form of domestic intrusion.

Except for these reservations, France-Telecom says it is ready to bring about big advances in public telephones. A national telephone booth may be open for service 18 months from now, alongside regional booths. Fixed or variable call times, with several price ranges (for the general public) and classes of retrocession (for editors), will give flexibility to the system. Continuity between access modes and their pricing (green numbers free, blue numbers with a single unit price regardless of distance, and booth surcharge numbers) will be harmonized. Various technical conveniences will be made available to service editors. The telematics commission should be looking into Audiotex. Finally, international collaboration will be initiated to build a European access network to Audiotex.

GERMANY

Major Telecommunications Joint Venture Detailed

91WT0006A Berlin AUSSENWIRTSCHAFT in German 22 Aug 90 pp 29-30

[Article by Dr. K. Thielecke, director of the Central Office for Public Relations, RFT SEL: "New Joint Venture—RFT [Radio and Telecommunications Technology] SEL [Standard Elektrik Lorenz] Nachrichtenelektronik GmbH"]

[Text] RFT [Radio and Telecommunications Technology] SEL [Standard Elektrik Lorenz] Nachrichtenelektronik GmbH Berlin, entered in the trade register in May, 1990, attained full business activities with the beginning of the economic, currency, and social union between the Federal Republic and the GDR on July 1, 1990, and began its operations then. One of the largest GDR joint venture proposals of that time was thereby turned into reality. In this context, Prof. Dr. Gerhard Zeidler, chairman of the board of directors at the Standard Elektrik Lorenz AG stated, "We were the first firm in the position to deliver telecommunications facilities for the GDR after the border was opened, and we were also the first to successfully endeavor to form a joint venture in the telecommunications field."

The RFT SEL Nachrichtenelektronik GmbH business office in Magdeburg, for the future Land Saxony-Anhalt, was already opened by the end of July.

The former VEB's [state owned enterprises] Nachrichtenelektronik Arnstadt, Funk- und Fernmeldeanlagenbau Berlin, and Stern-Radio Rochlitz were joined with Standard Elektrik Lorenz AG (SEL) to form the RFT SEL Nachrichtenelektronik GmbH (RFT SEL). It currently has about 6,000 employees. SEL AG, which has been majority-owned by the French telecommunications company Alcatel N.V. since 1987, had 1989 sales of about DM4 billion with 20,800 employees.

RFT SEL has a capital base of DM30 million and assets of DM130 million, 50 percent of which is held by SEL, while the other 50 percent is held on the GDR side. Juergen Apitz is the head of management, and his deputy is Joerg Burdach, the SEL General Manager. Dr. Peter Tietze and Dr. Andreas Waldraff were placed as additional managers.

The joint venture's field of business activity is the development, manufacture, and marketing of communications equipment and facilities.

RFT SEL Nachrichtenelektronik GmbH's corporate headquarters is in (formerly East) Berlin, and is divided into three branches:

- exchange systems, located in Arnstadt, with on-site manufacturing division;
- transmission systems and radio systems, located in Berlin with assigned fabrication facilities in Rochlitz;
- office communications, located in Berlin with six business locations in the GDR and related development and installation organizations.

This corporate structure does not place limits, but rather ties together. And so, complex projects which transcend individual sections are assigned to a primary contract manager, and the projects are worked on in partnership.

With a business and service network covering the area, with business offices in Berlin, Dresden, Erfurt, Leipzig, Magdeburg and—just opened in August 1990—Neubrandenburg, RFT SEL GmbH is moving its corporate concept close to the customer, right from the beginning.

RFT SEL Rapidly Effective in the Market

The joint venture should become one of the leading vendors of telecommunications systems in the GDR, with a considerable export segment built up. In 1990, 14 SEL AG self-contained exchanges for a total of 34,000 connections and a long-distance exchange with digital System-12 equipment were all placed into service in the Deutsche Post (East German phone company) network. Beginning in 1991, the deliveries will increasingly be born by RFT SEL.

In the second half of 1990, the new company will already reach sales of DM 400 million. Sales of DM800 million are sought in 1991 which should then increase about 10 percent per year.

Some advantages of the new company are, first, the innovative power, the great scientific-technical and technological sophistication, as well as SEL AG's leading market position. Others are the production experience, know-how and market awareness of the GDR communications electronics people in the other CEMA countries, and, not the least, the mutual growth of the range of products which will in the future cover the entire product spectrum in communications electronics.

RFT deliveries using analog exchange equipment (ATZ 65.1, EN-SAD, ATZ-KV, ATZ-AME) will initially remain in the production program to fulfill existing domestic and export orders. Simultaneously—beginning within weeks—a new fabrication hall will be erected on land owned by the Arnstaedt factory, and this new factory will take over manufacturing next year. Digital exchange equipment using System-12 technology will be produced in the new factory for public communications networks and dedicated private networks. In addition, the production and marketing of digital remote stations (System 12 B) are planned. In the final construction stage, a production capacity adequate for about one million connecting units annually is planned. An additional goal is to deliver to the Deutsche Post alone 1.5 million connection units.

Well-Prepared with the Digital System 12

The most important areas of cooperation between SEL and the RFT factories are the central areas of public exchange equipment and special networks. Added to that are the areas of performance-oriented transmission technology, microwave technology and office communication. Among these, the System 12 digital exchange system undoubtedly has a key position. The system, estimated to have cost about DM1 billion, was created by SEL AG and a decentralized structure. The expansion strategy is built into the system concept: a deliberate

modular and functional hardware and software architecture which can be expanded for new performance characteristics and services, open for equipment substitutions and thereby safe for use in the future.

The System 12 will not just be used for public communication networks. The modular structure permits economical creation of small and mid-sized exchange facilities without limiting performance. This flexibility is especially significant in dedicated communications networks. For example, the first stage of the Bundeswehr's digital dedicated telephone networks will be equipped with System 12 facilities.

So far, 28 countries have opted for introducing the System 12 from SEL and ordered about 30 million connection units. There are already 2,400 exchanges in service with 7 million connections, among them 550,000 in West Germany.

RFT SEL's special goal is the capture of eastern markets, because there is a great need for advanced exchange technology in the public systems. The phone company administrations of the CEMA countries are showing interest in the System 12, so this could be a "door-opening function" for marketing efforts.

RFT SEL is also equipped for the expansion of mobile radio networks in the GDR and other countries. For example, a special exchange system for information transmission between mobile radio stations—a variation of the System 12—has been included into the production program. The new company will soon be in the position to offer this expansion through its know-how-transfer of installations for central-channel signal broadcast systems (Zentralkanal-Zeichengabesysteme) Nr. 7 for mobile radio networks and for ISDN (Integrated Systems Data Networks).

The marketing program of RFT SEL's exchange system branch also includes SEL AG equipment installations, such as:

- Container (mobile) exchanges;
- Exchange positions;
- Network management facilities (for administration, service and maintenance);
- Terminals.

The corporate branch for transmission equipment and radio systems is directed towards the modernization and expansion of communications systems, with the support of the SEL AG. In this context, the Rochlitz factory is being profiled as the final assembly point for on-line PCM-transmission systems as well as for radio systems with components such as:

- Channel-configuring and PCM-multiplexing equipment;
- Digital line equipment for symmetric and coaxial copper cable and optical fiber cables;
- Facilities for network expansion;
- Hardware for broad-band networks;
- Digital and analog microwave systems;
- Digital rual microwave systems (RURTEL);
- Digital and analog mobile radio systems.

The RFT SEL corporate branch for office communications delivers in-house networks for voice, data, text and graphics transmissions, on the basis of modern SEL telecommunications equipment. With it, this corporate branch is in the position to provide optimal conditions for improving internal and external office communications conditions. The successful entrance into the market, with delivery dates for 24 remote location exchanges for health care offices in the GDR as well as for the control station for the Emergency First Aid Assistance office in (East) Berlin has already been completed.

The product selection of the office communications branch also includes equipment for dedicated long-distance networks, such as for energy utility companies, transportation companies and security agencies. At the same time, RFT SEL is taking over design, delivery, and installation of all types of call-up, voice and signal installations and building wiring, including using products from other companies.

GREECE

Spokesman Announces Telecommunications, Power Appointments

NC0911212790 Athens Domestic Service in Greek 1230 GMT 9 Nov 90

[Text] Government spokesman Viron Polidhoras today announced the government's decision to change the administrative councils of the Greek Telecommunications Authority [OTE] and Public Power Corporation [DEI].

Specifically, Nikos Themelis, former minister and former chairman of the audit council, has been appointed chairman of OTE and Polytechnic Professor Dhimitrios Kouremenos general manager. Former Supreme Court Judge Logothetis remains as deputy chairman, and Mikhalis Sakkas, secretary general of people's training, has been appointed deputy general manager. Dhimitrios Kiriazis, Tasos Kefaleas and Stelios Knithakis remain as councillors while Aimilios Zakhareas has been appointed new council member. In addition, the three employees' representatives remain on the council.

In DEI, economist Evangelos Volioudhakis has been appointed chairman while Themis Xanthopoulos remains as general manager.

ITALY

Telecommunications Satellite Project Presented

90MI0367X Rome AIR PRESS in Italian
12 Sep 90 p 2079

[Text] Sicral, a telecommunications satellite system for military and civil defense applications, was presented at the Farnborough exhibition as one of Selenia Spazio's current projects. Selenia Spazio is the prime contractor for the entire space-earth system. The program is currently at the detailed project stage while the development stage is scheduled for 1991 and launching is expected to take place in 1994-95. The Sicral system will perform the following functions: support and complement tactical and strategic telecommunications networks by using fixed, mobile, and transportable terminals with a domestic, European, and worldwide coverage and a wideband telecommunications capability (such as high definition images); fast document transmission and broadcasting; support the communications, command, control, and information operations carried out by the military, naval, and air forces; national emergency communications services for the Ministry of Internal Affairs and Civil Defense; provide support in the fight against terrorism, large-scale crime, and drugs by coordinating the relative data collection and transmission centers. The communications resources will be managed by either the armed forces' network of control centers or by those of a single branch, depending on the operational requirements, and will be coordinated by the Joint Chiefs of Staff. The satellite to be used for the Sicral system derives from Italsat; its platform will be stabilized on three axes and it will weigh approximately 2,000 kg. The Earth-based terminals and satellite transponders will make partial use of the technologies developed under the Italsat telecommunications program.

The Sicral system has the following characteristics; interoperability with systems used by NATO and the European allies, a high resistance to intentional interfer ence (jamming), a high level of adaptability to different operational conditions, adjustable geographic coverage, high traffic capacity, communications security and secrecy, and a high overall reliability.

Alliance Between Fiat, France's CGE Detailed

91MI0031 Rome AIR PRESS in Italian
10 Oct 90 p 2363-2364

[Text] Fiat and CGE, one of France's major private industrial groups, have announced a strategic alliance at the international level that will involve an exchange of shareholdings, a streamlining of industrial activities through a series of mergers, and the establishment of a joint European holding company to develop projects in areas of common interest. As part of the agreement, Fiat will buy about six percent of CGE's stock, corresponding to 6.4 million shares. The operation will include existing portfolio shares and convertible bonds to be issued by Alcatel NV. In this way Fiat will become one of CGE's major shareholders. CGE will acquire about three percent of Fiat's stock, that is 45 million ordinary shares for a total of about 450 billion lire. The operation will include portfolio shares and a convertible stock loan in portfolio shares. In this way CGE will become one of Fiat's major shareholders. Representatives of both groups will be on both companies' boards of directors and a strategic committee will also be established to increase long-term cooperation.

In the telecommunications sector, it has been decided to concentrate the activities of Alcatel Face and Telettra (which is 90 percent owned by the Fiat group). Fiat will acquire a 25 percent share in the new group in addition to the abovementioned six percent share in CGE. Telettra has been valued at approximately 2.5 trillion lire. With this operation, Alcatel, which is already a world leader in the development and manufacture of telecommunications systems will also become a world leader in cable and radio-link transmissions. In turn, Telettra will play a special role in the Alcatel group thanks to its R&D resources in the field of transmissions.

As far as industrial activities in the components sector are concerned, CGE will give Fiat 50.1 percent of the CEAc (European Accumulator Company which includes the Chloride Motive Power and ATSA-Tudor companies) group's capital and will retain its 48 percent share. CEAc operates in the sector of accumulators and lead batteries primarily for the automotive industry. Fiat, which was already involved in this activity with Magneti Marelli, will thus acquire a leading role among European manufacturers. Furthermore, agreements are currently underway to give 50.1 percent of Fiat Ferroviaria to the GEC-Alsthom joint venture (a world leader in the railway industry, and 50 percent owned by CGE). Fiat will keep its 49.9 percent share in Ferroviaria which therefore becomes part of a primary international concern. The Fiat and CGE joint communique mentions the establishment of a jointly-owned European holding company to promote interests and initiatives in common high-technology areas as another important aspect of the agreement between the two companies. In particular, the priority areas which have been identified comprise: composite materials, artificial intelligence, and new telecommunications services applied to the transport industry. By the end of the year, all these operations will become a series of agreements to be submitted to the competent authorities.

SWEDEN

ISDN Installation Ahead of Schedule

90AN0404 Chichester TELEFACTS in English
Jun 90 pp 2-3

[Text] The Swedish ISDN will be complete at least a year earlier than originally planned, according to Bo Hammarstrom, head of ISDN marketing at Swedish Telecom. He said that the new plans are to bring forward the national commercial introduction of ISDN to 1991.

Installation is scheduled to start in 1990, with basic rate access services available for field trials this month. Initially, basic rate services will be offered in-house to Swedish Telecom customers, terminal and computer manufacturers and software houses. Towards the end of the year, it will be offered to external customers.

Primary rate access will become available for commercial customers in late 1991. By the end of 1992, ISDN wil have been extended to 150 switches in the Swedish network—around 50 percent of the total. Hammarstrom expects by late 1992 to have the international gateway opened and operational, "ready for integration into the pan-European ISDN the CEC (EC Commission) wants in service by 1993." He expects all 350 local digital exchanges in Sweden will be equipped for ISDN by 1995. The programme will cost around $1 billion a year, according to Hammarstrom.

This summer's basic rate pilot trials will link three major cities in Sweden—Stockholm, Kirsta and Gothenburg—and will be used to trial a number of features. The most significant of these are Virtual Private Networks and a system Hammarstrom calls IWAN.

IWAN—Integrated Wide Area Network—is a national pc local area network. Swedish Telecom has developed the software and a series of ISDN interface cards that can be used with IBM-compatible pcs to transform them into "terminals for voice and data, utilising the company's internal remote network. Although this will mean that a pc can make use of a peripheral, such as a printer or a file server that may be physically remote from the pc, the effect is similar to that of a connection to a local area network.

Hammarstrom says that there are three basic elements, all performed by pcs. First is what he calls the integrated workstation (IW). Any number of these may be attached to the IWAN and provide ISDN telephony functions, local processing and have access both to each other and to remote resources. Network resources are managed by a resource station (RS) which functions as a server for the IWs and finally a network support computer (NSC) which administers and monitors all central functions for the network including its configuration. Usually the RSC uses the ISDN D channel to communicate with other terminals in the network.

The extension cards are to be built and marketed initially by Swedish Telecom's subsidiary Teli while the software will be licensed to a Swedish software firm. Hammarstrom estimates that the cost of equipping a basic three computer IWAN—one each IW, RS and NSC—will be around 12,000 pounds without the pcs.

The ISDN D channel will be pressed into use for signalling to Sweden's X.25 packet switched data networks which will be fully integrated with the ISDN in the long term.

TURKEY

New TV Relay Stations Commissioned

Station in Van

NC1311110190 Istanbul CUMHURIYET in Turkish 7 Nov 90 p 4

[Text] Ankara, (AA)—The main relay station for Turkish Radio and Television's TV-3 program in Van was commissioned today. The Post, Telephone, and Telegram Office said that the relay station is powered by a 450-kilowatt transmitter and will relay the TV-3 programs on channel 25 on the UHF band. Viewers of TV-2 programs will be able to receive the TV-3 telecasts by adjusting their receivers to channel 25 and will not need to change the direction of their television antennas.

The new relay station in Van cost 1.050 billion Turkish lira.

Meanwhile, relay stations have also been put into operation for TV-2 programs in the Derepazari, Surmene, Velikoy, and Ozdil regions.

Kozluca, Tercan, Mercan

NC1511214790 Istanbul CUMHURIYET in Turkish 11 Nov 90 p 4

[Text] Ankara, (ANKA)—Relay stations have been put into operation in Kozluca, Tercan, Mercan, Kurucay, Halfeti, and Bayburt for the Turkish Radio and Television network's TV-1 program. Relay stations have also been put into operation in Hidirkoy, Ortanca, and Karpuz for the TV-2 program. For better reception, television viewers in and around Kozluca should turn their television antennas toward the Karacakil location, viewers in and around Mercan toward the Kaltasitepe location, viewers in Kurucay toward the Gumustepe location, viewers in Halfeti toward the Asiktepe location, viewers in and around Bayburt toward the Aslanlitepe location, and viewers in Gurbulak toward the Kelavantepe location.

Aerospatiale Wins Satellite Contract

90AN0420 Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 10 Sep 90 pp 1, 3

[Text] The contract to build and launch Turkey's first commercial satellite, a project which the Turkish PTT has had on the cards for a few years now, has finally been awarded.

A consortium led by France's Aerospatiale has won the order, reported to be worth approximately $300 million, which includes the supply of a complete satellite system including ground station facilities to track the satellite, telecoms broadcasting equipment that will go up with the satellite, and the booster rockets needed to launch the satellite into space and finally into orbit.

The satellite will have up to 19 transponders to receive voice, fax, telex, data, TV and radio transmissions. Capacity for international telecommunications traffic to and from Turkey will be tripled. It will be launched, reportedly by an Ariane rocket, within three years.

Other companies in the consortium are West Germany's Messerschmitt-Bolkow-Blohm (MBB), France's Alcatel, Turkey's Teletas and several other local firms.

The other contenders for the contracts were consortia headed by Hughes Corporation of the United States and British Aerospace.

UNITED KINGDOM

UK Preparing Review of Public Services

90AN0421 Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 10 Sep 90 pp 7-8

[Article: "Potential Operators Voice Duopoly Opinions and Concerns"]

[Text] Britain's telecommunications industry—and service operators in particular—are gearing themselves to put forward their opinions to their regulators, the Department of Trade and Industry and the Office of Telecommunications (Oftel), in preparation for a major review of the nation's public communications services. The review is scheduled for completion by January 1991, a time of year now firmly fixed in the industries diaries for major UK telecommunications regulatory pronouncements.

The review will be carried out by Professor Sir Bryan Carsberg, Director General of Oftel. Known colloquially as "the Duopoly Review" it is intended to look back over the last seven years during which the UK has been serviced by two national, fixed line, public telecommunications operators. During that time British Telecom plc and Mercury Communications Ltd between them have had the exclusive privilege of providing long-distance, point-to-point, communications links. Now comes a time to reflect on whether the policies that introduced a measure of competition have been successful, and whether further changes are required.

Already, the preliminary skirmishes have begun, with Mercury Communications lashing out at a proposal by British Rail that it, and possibly other utility companies with existing and extensive long-distance networks, should be licensed as Specialised Telecommunications Operators, able to re-sell spare capacity on its 17,000 km of cable and 1,000 km of microwave radio links.

Mercury contends that "non-telecommunications companies with excess private capacity should not be licensed to off-load their space capacity into the market in order to reduce their overheads." Chief Executive, Peter van Cuylenburg claims that "this would create serious problems of quality and customer confusion."

Ironically it is one of van Cuylenburg's subsidiary companies, Mercury Personal Communications Ltd, that could stand to gain from such a change in regulation. Together with Unitel Ltd and Microtel Ltd, this company is to be granted a licence to build and operate a nationwide "micro-cellular" mobile communications network that will ultimately compete for voice traffic with existing mobile communications operators and potentially with fixed public networks.

Between them, the three PCN firms estimate that they will have attracted some 12 million users by the end of the decade. The fact is, that with investment planned at more than 1 billion pounds each over the 10 years, they will need that number of users to survive.

Now the concern of each is to build its network infrastructure faster than the others. And that means making extensive use of fixed trunk communications links that, under current rules, they can only lease from British Telecom and Mercury. All would be happy to have third or even fourth suppliers to choose from. They emphasise that it is not only money they would expect to save but time. All are racing for a 1992 deadline to get their networks ready for commercial use. "If we are to meet our tight schedules we simply can't afford delays while we wait for fixed lines for base stations to our switching centres," one told INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE (ITI).

Of the three, the British Aerospace-led Microtel has been the most vociferous in making its opinions known through official channels. Microtel has made a formal submission to Oftel, while the other two admit to holding informal discussions, but have not as yet added written statements to the evidence piling up on Professor Carsberg's desk.

Bristol-based Microtel is concerned that the fine print of its licence, although still to be finalised, is being written during the present telecommunications environment, yet will be applied under whatever regime results from the review. As a consequence it is seeking assurance that amendments will be possible to take account for any changes that ensue.

One concern of Microtel's is the interpretation of the word "mobile" in its licence. Spokesman Paul Franklin told ITI:

"Our business view of mobile and the DTI regulatory definition of mobile are somewhat different. The first draft of our PCN licence says that a terminal is mobile when it is 'designed or adapted for use when in motion' and that clearly limits us somewhat in our ability to provide some services." Franklin explains that it poses a question over whether the company will be able offer a total service, for example, to a wireless PABX user who also wants to run fixed extensions with mobile and fixed phones using an integrated numbering plan.

It also raises doubts for Microtel about data transmission over the PCN networks. "We will be allowed to install a

base station in a building and run mobile handsets from it but if the customer wanted to use data terminals the position is unclear. An example of this would be in PC networks, where radio interconnection could realise considerable savings on moves and changes compared with fixed wiring. Ideally we would like to provide a PCN connection to personal computers. But a personal computer is clearly not designed or adapted for use while in motion. So even though we could use our wireless technology to connect them, the fact that they are fixed according to the DTI definition may mean that we are not allowed to."

Strict interpretation of the mobile rule could also preclude that legal use of PCNs with portable computers: "Transportable is not mobile," Franklin comments. "We understand the definition to mean 'usable while in motion' so even if you wanted to attach a PCN terminal to a portable PC we are not convinced that our current licence will allow us to provide such a facility—its certainly not clear that we are able to. Portable facsimile is another case. So the whole concept of using data over the network is questionable from a regulatory view."

The confusion would be cleared, Franklin says, if the terms of the PCN licence allowed Microtel to provide a range of fixed services.

At the same time, Microtel wants the right to self-provide fixed links in its infrastructure. "We do not want to be a third PTO providing long-distance services in competition with Mercury or British Telecom, but we do want to have control over our own network," Franklin says. "We want to bring the costs of the fixed network under our own control so far as it is possible so that we can operate effectively, so we believe we need to be able to self-provide our own fixed links. Under present regulations we can self-provide local radio links from base stations to our switching centres. We cannot provide fixed links between mobile switching centres or between our network and the public switched telephone network."

Although neither Mercury Personal Communications nor Unitel have made a formal submission yet, they are in principle agreement on the need to have a greater degree of control over the wireline sections of their infrastructures.

The priority for Unitel is time. It too wants to be able to self-provide fixed links, but is also a firm proponent of British Rail's concept of specialised PTOs.

Alan Thompson, Corporate Affairs Director, told ITI: "We have been in communication with the DTI for some time now to highlight the issues we believe to be relevant. The very fact that we have a licence represents a significant degree of liberalisation in our favour. Now we need to ensure that any changes engender confidence in our investors."

There are two main points in that respect," Thompson said, "We want to be able to minimise the cost and maximise the flexibility in the building of our network. We encourage the establishment of licensed transmission operators for backbone provision We would also like the freedom to build our own backbone network—whether we do that or not would be a commercial decision on whether it would be cost effective compared with leasing from third parties." Most important, though, is timely availability of fixed link resources—"Our business plan has no margin for delays in delivery of fixed circuits."

Thompson also would like to see what he describes as "regulatory stability". "We are asking our investors to make a very large-scale investment and we would like to see an assurance about the introduction of new competition, or extensions to existing competition so that their confidence is not undermined."

For Mercury Personal Communications the issue is more complex. On the one hand it is closely associated with one of the existing fixed line PTO's. But a spokesman stressed that the company has to keep an "arm's length" relationship with its parent.

"There are a number of issues that might arise from the duopoly review that will have significant impact on PCNs. We are obviously looking to have good access to fixed networks," he told ITI. However, the review is meant to look back over the last seven years, he commented—"and so far as Oftel is concerned PCN really finds its application in that context once we really start to compete in the local loop—but we are much more interested to see that Oftel concludes, rather than necessarily to contribute, any views of our own. Our immediate needs will be taken care of by the terms of our licence which, as far as we understand, the PCN licence will not form part of the duopoly review, in as much as it will be ratified by Parliament before the review is complete."

BBC World Service Awarded Budget Increase

PM0911142690 London DAILY TELEGRAPH in English·9 Nov 90 p 4

[Jane Thynne report: "Gulf Crisis Cash Aid for World Service"]

[Text] The Government has given the BBC World Service its biggest budget rise for years to reflect the value of the service, especially to Eastern Europe and throughout the Gulf crisis. The BBC is to extend its Gulf Link service for relatives to send messages to people stranded in the Gulf to 45 minutes a day.

The service has received 3,500 calls since it was started in September.

The BBC's costs for extra broadcasting in Arabic and English during the crisis may be met by the Government, the Foreign Office said.

Yesterday's rise of six percent in real terms, takes the World Service budget next year to 159.5 million pounds, from 142.5 million pounds for the year ending April 1991.

The money will go both on programming and on increasing audibility in Eastern Europe and India, where reception is becoming patchy.

The 38-language World Service is the only part of the BBC which is funded by the Government and the Foreign Office allocates the budget every three years. The 1992 budget will be 166.3 million pounds and for 1993, 175.8 million pounds.

The new budget has not been settled without some cost to the BBC. The World Service agreed this year to axe its Japan and Malay services in return for increased programme hours to countries considered in greater need of impartial information, including China and Russia.

Part of the budget rise will go towards hiring more staff for the Eastern Europe section of the BBC's Monitoring Service, which eavesdrops on media around the world.

Mr John Tusa, managing director of the World Service, said yesterday: "We're glad the Government has recognised that, just as the 1980s were the years of investing to improve audibility, so the 1990s will allow us to put more money into programmes."

KDD, ATT, UK, French Firms Agree on Private Networks

OW1411060590 Tokyo KYODO in English 0244 GMT 14 Nov 90

[Text] Tokyo, Nov. 14 KYODO—Kokusai Denshin Denwa Co. (KDD) said Wednesday the world's four leading telecommunications firms have agreed on a joint project for international private networks.

The firms are KDD, American Telephone and Telegraph (AT and T) of the United States, British Telecom, and France Telecom.

Under the accord, the four telecom giants will join to help international corporations build individual international networks, a KDD spokesman said.

Cross-border companies are increasing their voice, data, facsimile and video-imaging needs through international networks offering a high level of reliability and availability, the spokesman said.

END OF FICHE

DATE FILMED

8 Jan 1991